ENGINEERING NEWS-RECORD

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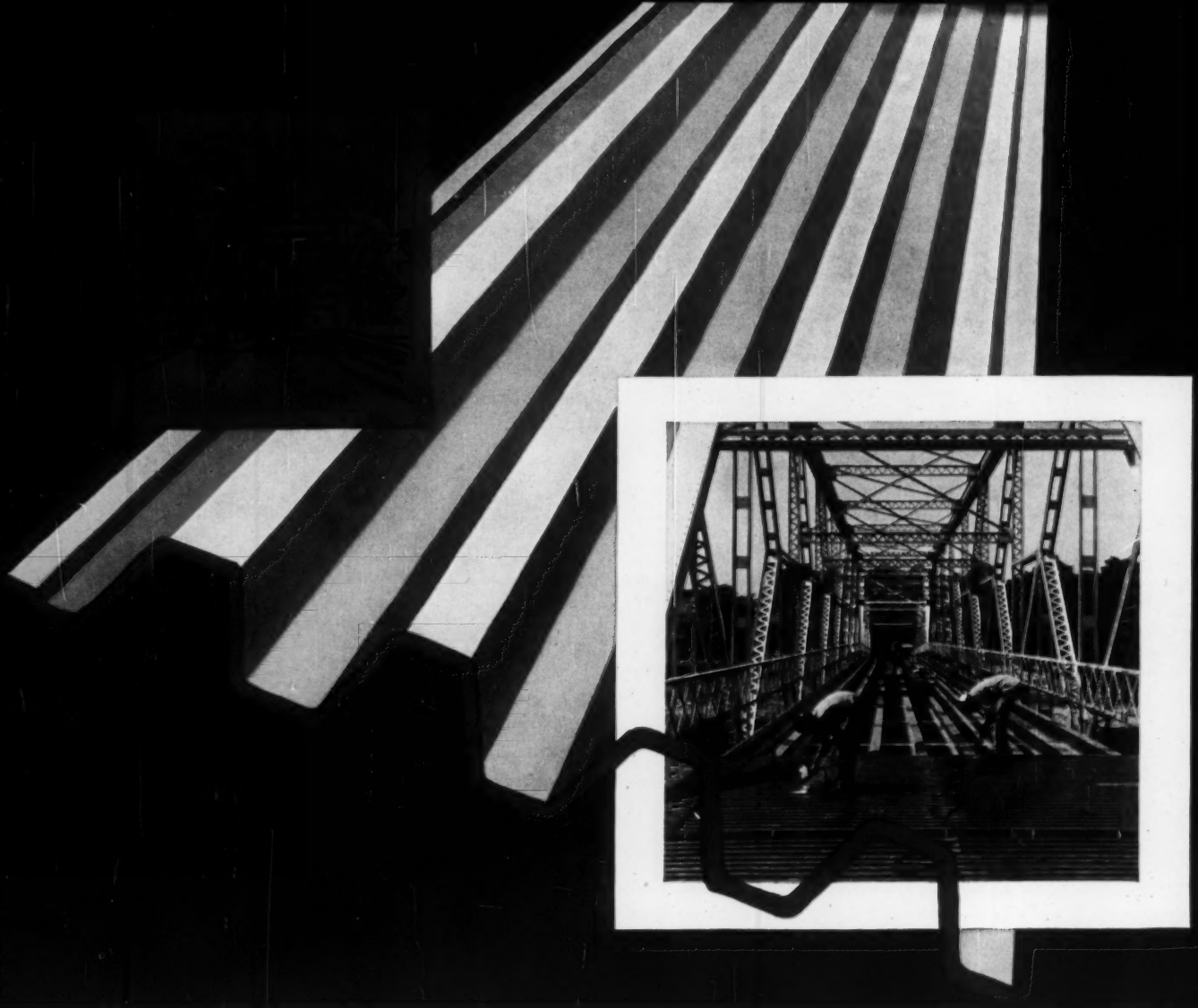


Bridges got the silent treatment

You can't always tell the age of a bridge by the number of rattles. The clang and clatter of worn-out flooring made many bridges sound old before their time. Floor replacement was often expensive and short-lived.

Then Armco Engineers decided to give bridges the silent treatment. They developed Armco Corrugated Metal Bridge Plank. It was strong, light in weight, easy to install and low in cost. This planking could be welded to steel stringers or bolted to wooden ones. The entire structure was stiffened. An asphaltic concrete traffic surface completed the job.

Thus traffic was assured a safe, smooth crossing, free of noisy clatter. Maintenance was reduced to no more than normal road surface upkeep.

Providing better products to meet specific needs has been standard practice at Armco for more than 40 years. A few examples are FLEX-BEAM Guardrail, Pipe-Arch, ASBESTOS-BONDED Pipe and MULTI-PLATE Bridges. Today you can bring your drainage and construction problems to Armco with full assurance you will receive all the benefits of long experience, extensive research facilities and a real interest in helping you solve these problems.

Armco has a complete range of engineered products and convenient, authoritative data to help you. If your problem is difficult or unusual, why not talk it over with us.

ARMCO

ARMCO DRAINAGE & METAL PRODUCTS, INC.

"OUR MITI-MITE SAVES US $8,780 PER YEAR"—

say STEFFAN BROTHERS of Carpentersville, Ill.

That's the record chalked up by this up-and-coming earth-moving contractor at the Meadowdale housing development near Elgin. "Our MITI-MITE® with trench hoe attachment has been averaging 400 feet a day digging a 30" trench from ' to 8' deep. During the past year of operation, we saved 4.00 an hour for a total of $8,870.00 over competitive rental machines."*

P&H modern design adds up big savings. For instance, MITI-MITE has all-welded construction — *proved by P&H or over 20 years* to give you superior strength. As a crane it gives you a full 8-ton capacity to handle a wide variety of long- or short-boom jobs. Take the MITI-MITE anywhere; its rugged carrier is built for your roughest, toughest jobs.

And as far as maintenance costs go . . . they're the lowest in the business. The MITI-MITE is a real money-maker at a low price. See it yourself at your P&H dealer's. P&H Power Crane and Shovel Division, HARNISCHFEGER Corporation, Milwaukee 46, Wisconsin.

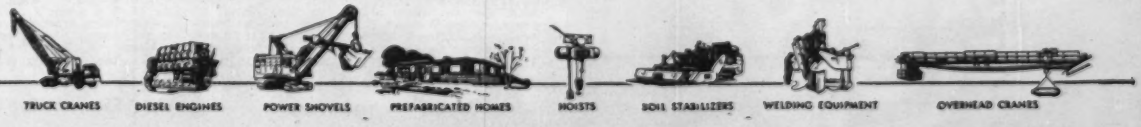
*User's statements are quoted from a certified Gould Report, available upon request. Ask us to send you Gould Report No. 5412. Or ask your P&H dealer.

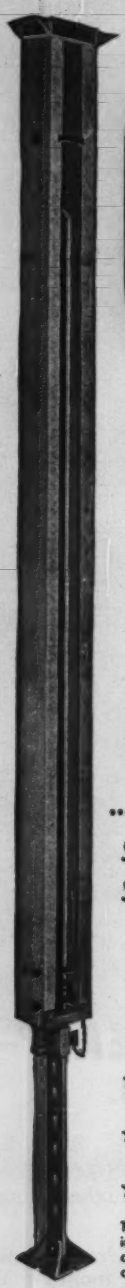
HARNISCHFEGER

See your P&H dealer

"Your P&H Dealer has the experience, the organization and the facilities to serve you reliably in every way. He's ready to deliver the kind of on-the-ground service that keeps your jobs moving on schedule. Your P&H Dealer is tops in the business. Get to know him."

P&H Line





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Work like hydraulic

★ **COMPLETE**
Scab, Tee-head, and Extension allow for every type of use

Try these shores on your next job. See for yourself . . . you'll be convinced that Symons Shores are FIRST CHOICE because of the savings they will mean to you in time and money.

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Only two units—both alike, no loose parts

★ **SIMPLE TO APPLY**
Require only a hammer, and are completely adjustable

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Robert F. Boger
Publisher

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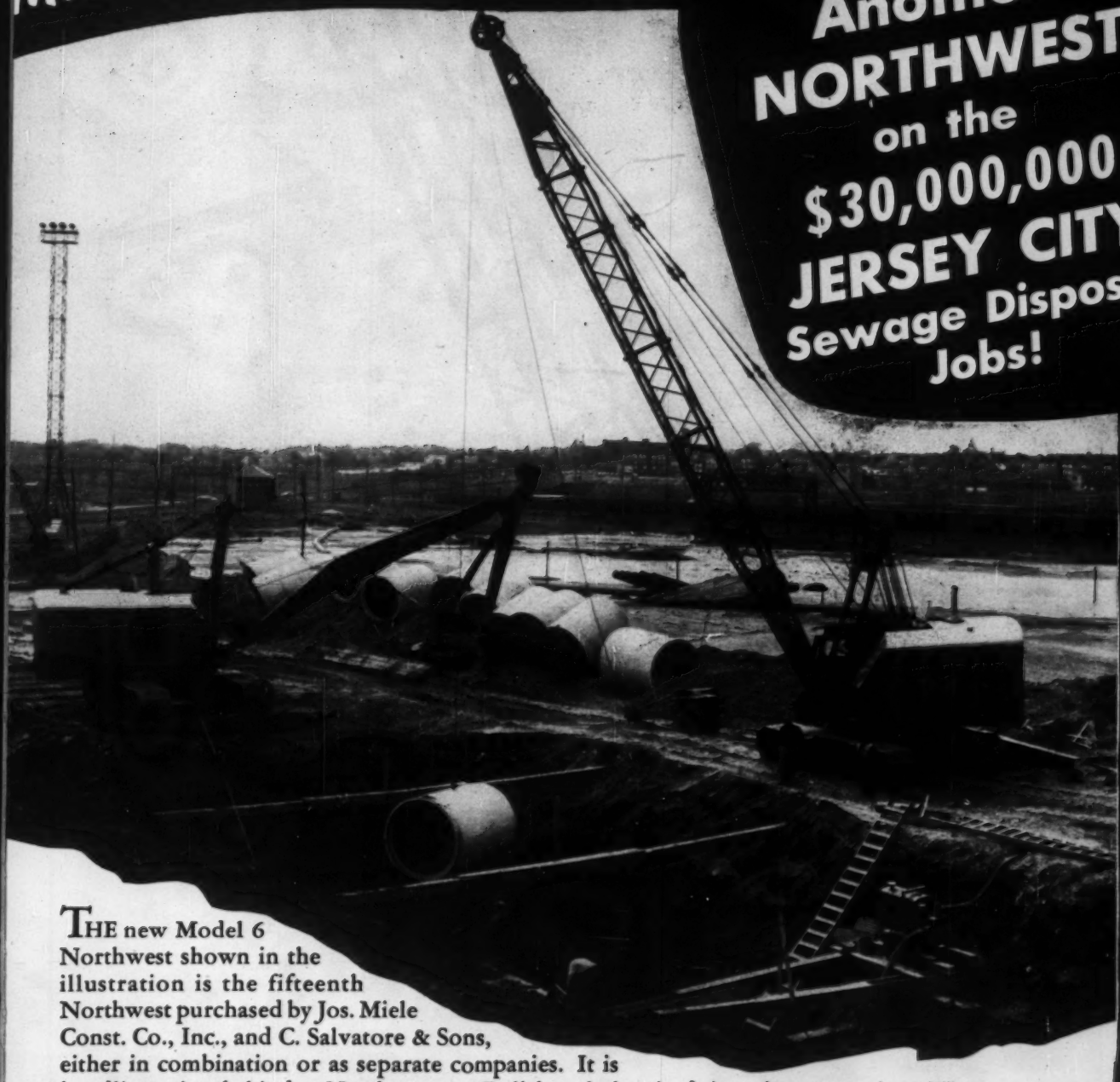
MIELE & SALVATORE put Another NORTHWEST on the $30,000,000 JERSEY CITY Sewage Disposal Jobs!



THE new Model 6 Northwest shown in the illustration is the fifteenth Northwest purchased by Jos. Miele Const. Co., Inc., and C. Salvatore & Sons, either in combination or as separate companies. It is handling pipe behind a Northwest 95 Pullshovel that is doing the excavation. The Pullshovel is going 29 to 30 ft. deep and can bottom out at greater depths. Northwest 95 Pullshovels are digging to depths of 32 ft.

It is operation like this that makes one out of every three Northwests a repeat order in the hands of responsible contractors like Miele & Salvatore. It's the kind of operation you want! If you are considering the purchase of a Shovel, Crane, Dragline or Pullshovel, either crawler or rubber mounted, get full details on the size machine you need.

NORTHWEST ENGINEERING COMPANY
1502 Field Building., 135 South LaSalle Street, Chicago 3, Illinois

YOU CAN'T HAVE NORTHWEST ADVANTAGES UNLESS YOU OWN A NORTHWEST

NORTHWEST

CRAWLER and TRUCK MOUNTED SHOVELS • CRANES • DRAGLINES • PULLSHOVELS

TUNE IN...TEXACO
STAR THEATER
starring
DONALD O'CONNOR
or JIMMY DURANTE
on television...
Saturday nights, NBC.

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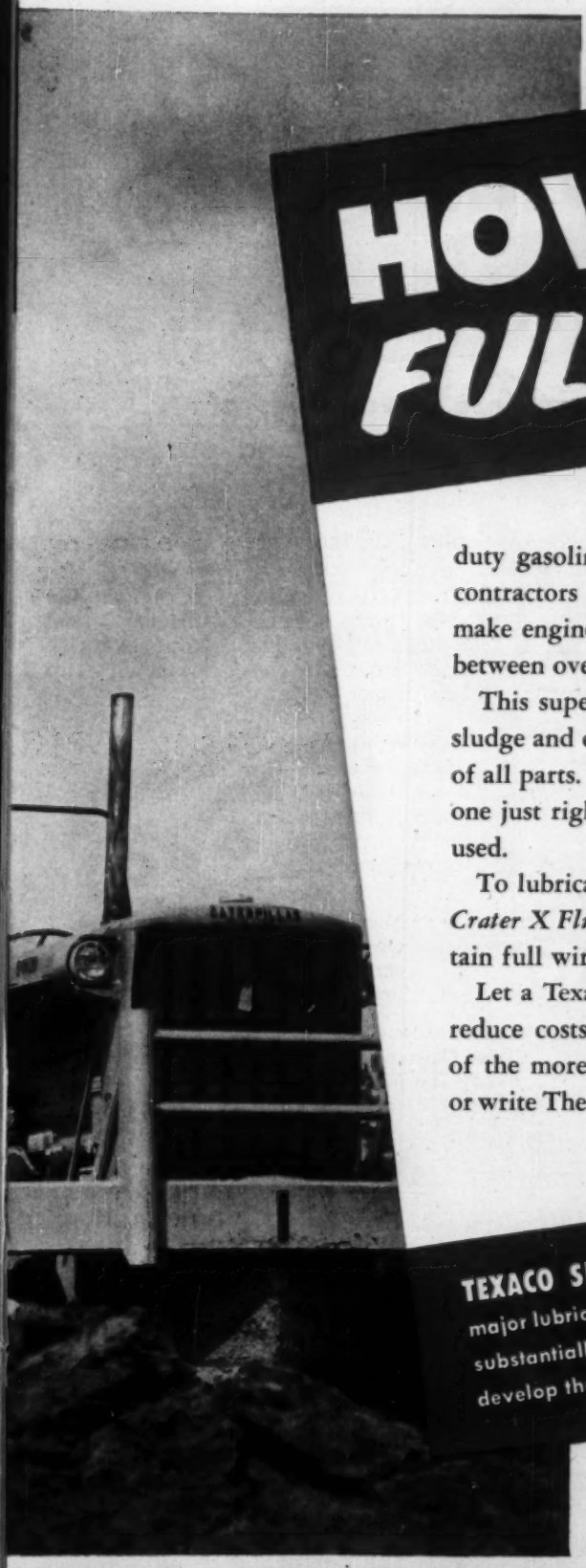

HOW TO GET *FULL* POWER

FULL POWER from diesel and heavy duty gasoline engines is possible only with effective lubrication. So contractors everywhere use *Texaco Ursa Oil*—especially refined to make engines deliver *more power* with *less fuel* over *longer periods* between overhauls.

This superior oil gives you even more. It keeps engines free from sludge and carbon deposits... it minimizes wear and prolongs the life of all parts. There is a complete line of *Texaco Ursa Oils.* You can get one just right for every engine whatever the size, type, speed or fuel used.

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Let a Texaco Lubrication Engineer help you step up efficiency and reduce costs in every phase of your operation. Just call the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States, or write The Texas Company, 135 East 42nd Street, New York 17, N. Y.

TEXACO SIMPLIFIED LUBRICATION PLAN. You can handle all major lubrication with not more than six Texaco Lubricants—and save substantially in time and money. Let a Texaco Lubrication Engineer develop the Plan best suited to your particular demands.

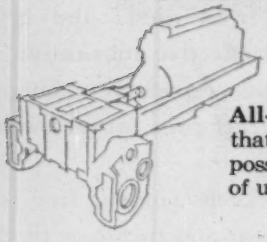
Lubricants and Fuels

FOR ALL CONTRACTORS' EQUIPMENT

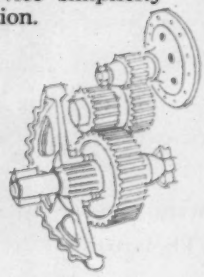
Allis-Chalmers presents the new

ANOTHER BIG STEP AHEAD IN LOW-COST DIRT MOVING

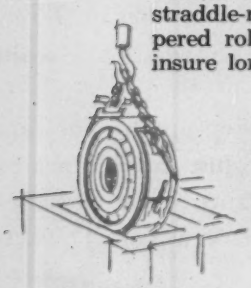
. . . with all the important performance advantages of Allis-Chalmers advanced basic design . . . tested and proved over millions of operating hours!



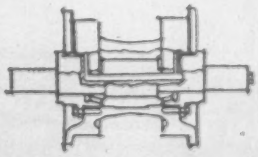
All-Steel Box-A Main Frame that soaks up shock loads, makes possible the service simplicity of unit construction.



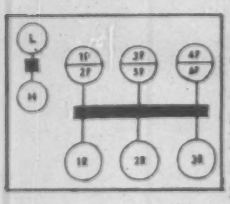
Exclusive One-Piece Steering Clutch and Final Drive Housing with all final drive gears straddle-mounted on tapered roller bearings to insure long life.



Unit Construction lets you remove engine, master clutch, transmission, steering clutches and final drives without disturbing adjacent parts.

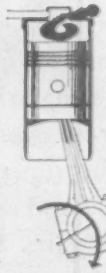


1,000-Hour Lubrication Intervals for roller bearing truck wheels, idlers and support rollers . . . makes production time out of service time.

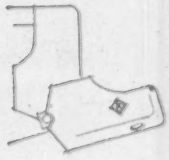


Dual-Range Constant-Mesh Transmission lets you go from any forward speed to any reverse speed by shifting only one lever. Eliminates double shifting! That means faster work cycles . . . more production!

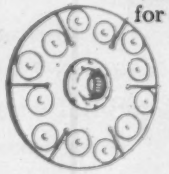
plus . . . these great new features:



New Allis-Chalmers Diesel Engine with "follow-through" combustion and tornado turbulence . . . for smooth engine performance, cleaner combustion, extra long engine life.



New Wrap-Around Radiator Guard used as dozer lift frame to simplify design, reduce cost of bulldozer; guard tilts forward for easy service.



New Master Clutch with Ceramic Lining sets new standards of clutch life . . . with fewer adjustments required.

New Operator Convenience including roomy, flat platform . . . foam rubber seat . . . 24-volt direct electric starting . . . 60-gal. fuel tank.

Tough New Track — New design, through-hardened with extra toughness for long life even in severe abrasive conditions.

PLUS . . . new, all-weather cooling; independent radiator-core mounting; new strength and capacity in final drive gears, shafts and bearings.

NEW STANDARDS OF PERFORMANCE AND LONG LIFE ON A WIDE RANGE OF JOBS

You owe it to yourself to investigate the performance advantages of the HD-11 . . . newest addition to the Allis-Chalmers leadership line. See your nearby Allis-Chalmers dealer now.

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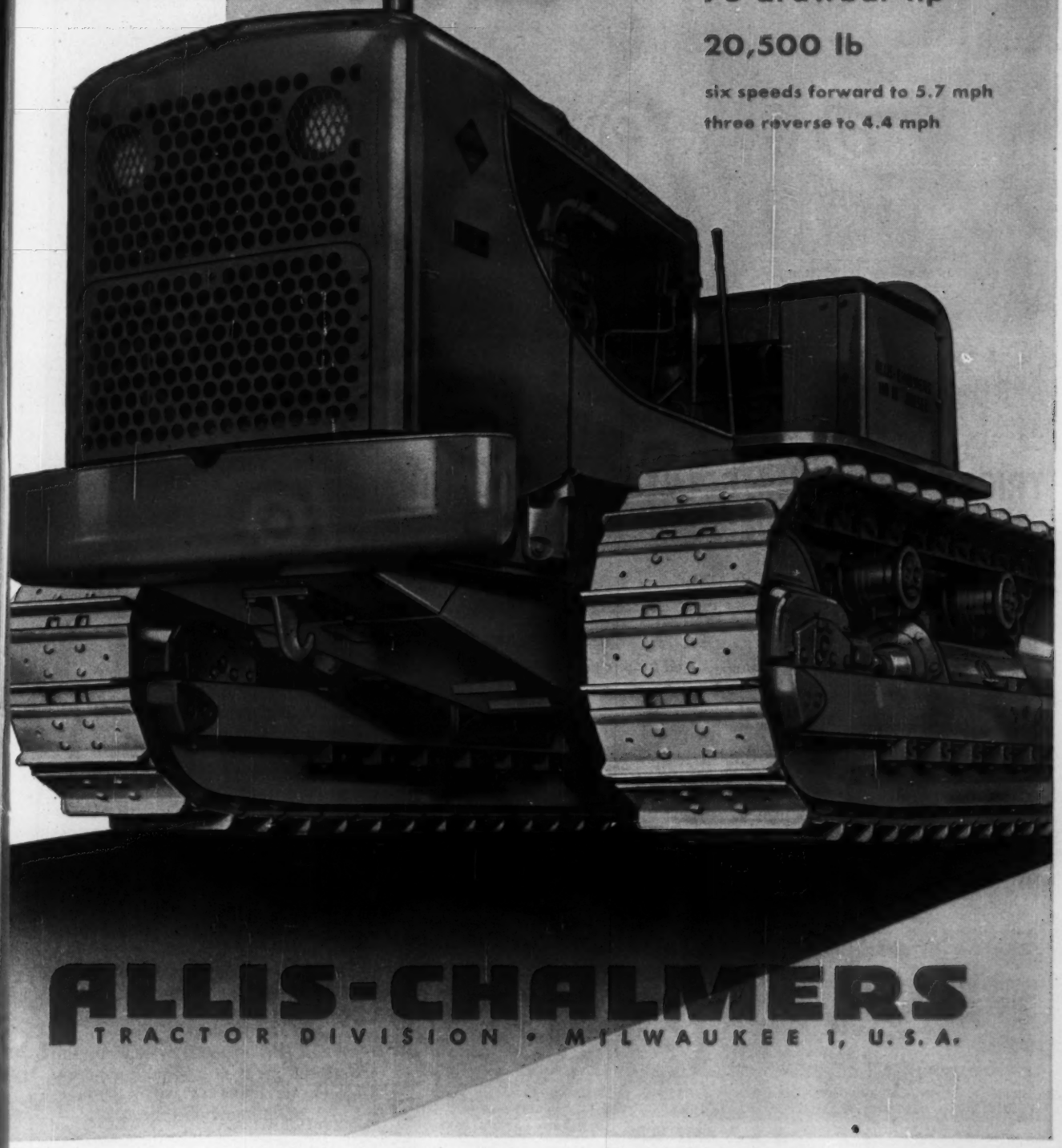
90 net engine hp

75 drawbar hp

20,500 lb

six speeds forward to 5.7 mph

three reverse to 4.4 mph



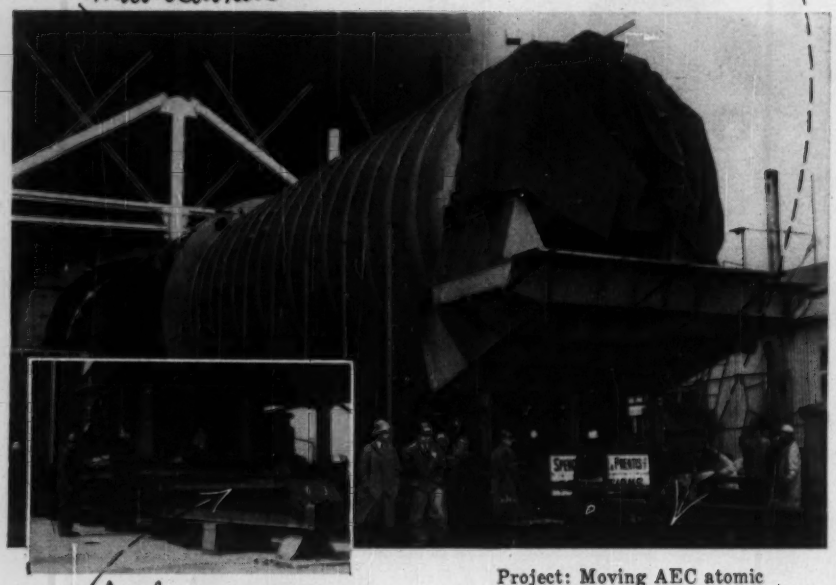
ALLIS-CHALMERS

TRACTOR DIVISION • MILWAUKEE 1, U. S. A.

ANOTHER PROBLEM SOLVED BY SPENCER, WHITE & PRENTIS

½ inch horizontal tolerance maintained

Trestle built over filled-in land



Jacks are of our own design

Project: Moving AEC atomic power plant for General Electric and General Dynamics, at Knolls Atomic Power Laboratory.

TRICKY PROBLEMS SOLVED AS 1300-TON ATOMIC POWER PLANT IS MOVED

For the sake of speed and ease, the prototype hull for the submarine *Sea Wolf* was built, to near-completion, outside the test sphere. It then became the job of Spencer, White & Prentis, as low bidder, to move it from its construction slab into the sphere.

With deflection tolerances limited to ⅛-inch on the end housing sensitive equipment, the big 1300-ton unit had to be handled with the most exacting care. On request, we will be glad to explain the methods devised by our skilled specialists—particularly for the tricky problem of transferring the hull to the steel tracks and runner beams on which it was moved the required 222 ft. Inset photo shows the jacks used for motive power, these being of our own design and manufacture.

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LETTERS

Optical Plummets on Transits

SIR: On p. 57 of the ENGINEERING NEWS-RECORD for April 7, 1955, under New Products, there is a description of an optical plummet on a surveyor's transit. I quote from the second sentence: "Now, for the first time, this time-saving device is available on an American transit."

We wish to point out to you that we have been manufacturing a device of this sort on our transits which are, of course, American instruments, for a number of years. This was shown in our catalog literature printed two years ago ,and was exhibited and demonstrated at the Shoreham Hotel in Washington, D. C., at the American Congress of Surveying and Mapping in March, 1953.

W. L. EGY,
Exec. Vice Pres.
Brunson Instrument Co.

[EDITOR'S NOTE: The Brunson device referred to is a transit with a hollow spindle. By rotating the instrument telescope to a vertical position, straight down shots may be made, hence it may also be used as an optical plummet.]

Training for Engineers

SIR: The cooperative three-year liberal arts = two-year engineering program between Colgate University and Columbia University and Rensselaer Polytechnic Institute described in your editorial of May 26, p. 164 on "Broader Training for Engineers" is one of the plans being offered to students who wish—in the words of the editorial — the "opportunity to broaden the base of their education".

Some engineering schools have felt that the best way to meet the problem of covering the basic sciences and the ever-growing list of engineering courses without crowding out the essential work in the humanities is to require all engineering students to expand the engineering course to five years leading to a BE degree. With rising tuition and other college costs this added year becomes a very serious problem to many students and their families.

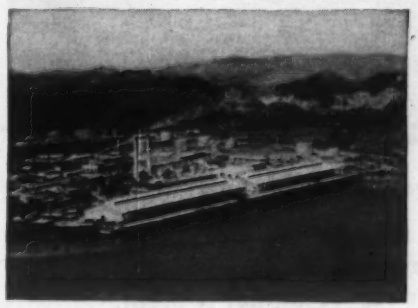
A third program that is being used to meet this need to broaden the training of engineers is the offering of a 5-year program leading to the AB and BE degrees with all of the work taken at the same institution as we are doing at Union College.

(*Continued on page 12*)

RIGHT
61,449 feet of Raymond Piles support San Juan's new Constitution Bridge. In the background, the Cerra Overpass rests on 171 Raymond piles.

BELOW
Raymond's floating pile driver is shown at work on the Commonwealth Refinery Pier in Guayanilla Bay. Raymond is handling complete construction on this job. In the background is another Raymond project, the Texas Co. Pier.

BELOW
Two more Raymond projects are the San Juan Steam Electric Plant and wharf built for the Puerto Rico Water Resources Authority. Units 5 and 6 of the Steam Electric Plant are currently under construction by Raymond.



Raymond LANDMARKS IN PUERTO RICO

SINCE 1948 Raymond has handled over 38 projects ranging from pile foundations to the complete construction of such structures as the San Juan Steam Electric Plant and the Commonwealth Refinery Pier. If you're interested in foundation work or construction in Puerto Rico—or anywhere else in the world—contact Raymond Concrete Pile Co. of Puerto Rico or our New York Office.

THE SCOPE OF RAYMOND'S ACTIVITIES...

IN THIS COUNTRY
FOUNDATIONS . . . MARINE STRUCTURES . . .
HEAVY CONSTRUCTION . . . SOIL INVESTIGATION.

OUTSIDE THE UNITED STATES
COMPLETE SERVICES FOR ALL TYPES OF CONSTRUCTION.

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CONCRETE PILE CO.

BRANCH OFFICES in principal cities of the United States, Canada, Central and South America.

140 CEDAR STREET • NEW YORK 6, N. Y.

You won't find all these hour-saving, dollar-saving

Hendrix Dragline Bucket Features

anywhere else!

●

A TYPE AND SIZE FOR EVERY DIGGING PURPOSE

●

All HENDRIX Buckets available without perforations

¼ to 40 Cubic Yards

Hendrix Lightweight Dragline Buckets

HENDRIX MANUFACTURING COMPANY, Inc.

MANSFIELD, LOUISIANA

Dollar-Saving Features

A Hendrix Dragline Bucket automatically steps up your yardage *for bigger pay-load profits.* Because of lighter weight, type for type, a larger Hendrix can often be used without overloading the machine. This extra yardage is just one of the dollar-saving, profit-making features of a Hendrix.

Work-Saving Features

Hendrix Dragline Buckets are designed to give maximum performance and built for dependable operation on even the toughest jobs. Perfectly balanced, Hendrix Buckets *handle easier, fill faster* and *dump cleaner*... moving more yardage in less time.

Long-Life Features

Years of know-how and engineering have gone into the manufacture of Hendrix Dragline Buckets. High quality materials and consistent expert workmanship put into the all-welded Hendrix Bucket assure trouble-free, long-life performance day in and day out... job after job.

ONE OF A SERIES

You Get Many Benefits by Specifying VICKERS® Hydraulics

Factory Trained *Field Service Specialists* From Coast to Coast

All machinery made by man requires servicing at times. Every manufacturer has two responsibilities: First, to build his equipment in a way that will require the least amount of servicing. Second, to see to it that servicing, when needed, is handled with speed, efficiency and low cost.

Vickers hydraulic equipment is built to keep service requirements to an irreducible minimum. But when service is required, it is handled by Field Service Specialists working out of Vickers offices from coast to coast. These men have been carefully trained in Vickers plants and are thoroughly competent. They know how to adjust and maintain any piece of Vickers equipment . . . any combination of components. They are also qualified to instruct customers' service organizations in improving their hydraulic maintenance practices. These men devote their full time to servicing Vickers products in customers' plants. They do their job well and at minimum expense.

This is only one of many benefits you receive when you specify Vickers Hydraulics.

VICKERS
Incorporated
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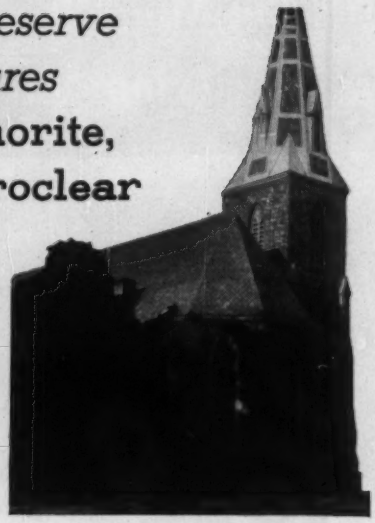
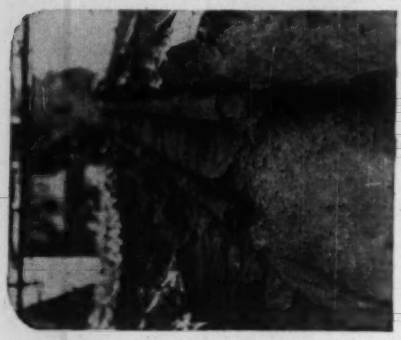
6395

ENGINEERS AND BUILDERS OF OIL HYDRAULIC EQUIPMENT SINCE 1921

How to restore and preserve costly masonry structures with **D-J Mortar, Thorite, Thoroseal and Thoroclear** *even though masonry looks beyond repair!*



Second Episcopal Church of Boston, Brookline, Mass.



Only the bare skeleton of cornice remains after years of disintegration.

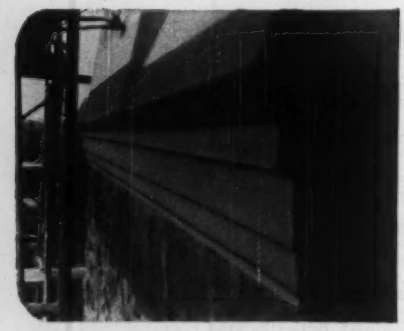
To repair, all loose material was cut out and complete surface was wire brushed in preparation of THORITE treatment.

Above photos show how vines grew over stone structure and hid most of damaged masonry.

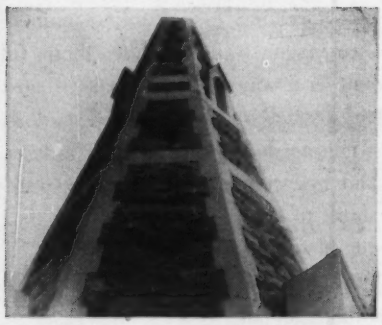
Vines were cut away from building and disintegrated joints grouted with D-J Grouting Mortar.

Stone trim was then given two coats of THOROSEAL. Entire surface received a coat of transparent THOROCLEAR.

ALL MASONRY NEEDS PROTECTION



AFTER Brush and trowel coat of THORITE, nonshrink patching mortar was used to restore this masonry to its original lines. A two-coat application of THOROSEAL was applied to beautify and protect the surface. Nonsagging THORITE can be used to model any masonry structure back to its original lines.



Stretcher stone work treated with D-J Grouting Mortar and entire stone surface THOROCLEARED.

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LETTERS

The liberal arts courses are spread throughout the five year program. This we feel to be a distinct advantage. We feel that a student in his fifth year will be somewhat more mature than a man in his third year of college and that this added maturity should be of particular value to him in a more thorough appreciation of his work in the liberal arts. Taking all five years at one institution has the advantage that the students who wish to participate in student activities will have the opportunity of becoming managers and holding other positions of responsibility usually held by seniors.

The acceptance of this program at Union College was better than we had expected. The five-year program was made available to students entering last September without any particular efforts at promoting it. Fourteen or about one-eighth of the freshmen engineers are in the five-year program in spite of the extra cost involved.

The schedule calls for approximately 18 credit hours per semester, which is our normal engineering load, as compared to 15 credit hours per semester for the liberal arts students. It will be interesting to see how this first group holds up and what the future development of this and similar programs will be.

ANTHONY HOADLEY,
Professor,
Union College,
Schenectady, N. Y.

CALENDAR

Society of American Military Engineers, Western Regional Convention, Olympic Hotel, Seattle, Wash., Aug. 18-20.

Pennsylvania Sewage and Industrial Wastes Association, annual conference, Pennsylvania State College, Aug. 22-24.

American Society of Civil Engineers, hydraulics division, University of California, Berkeley, Calif., Aug. 24-26.

International Association for Hydraulic Research, 6th Plenary meeting, Delft, Netherlands, Aug. 29-Sept. 2.

New York Section, American Water Works Association, annual fall meeting, Saranac Inn, Saranac Inn, N. Y., Sept. 8-9.

Western Association of State Highway Officials, annual conference, Jackson Lake Lodge, Wyo., Sept. 8-10.

New England Water Works Association, Lake Placid Club, Lake Placid, N. Y., Sept. 18-22.

International Road Congress, Dolmabahce and Yildiz Palaces, Istanbul, Turkey, Sept. 26-Oct. 16.

Federation of Sewage and Industrial Wastes Associations, Ambassador Hotel, Atlantic City, N. J., Oct. 10-13.

Southwest Section, American Water Works Association, San Antonio, Tex., Oct. 16-19.

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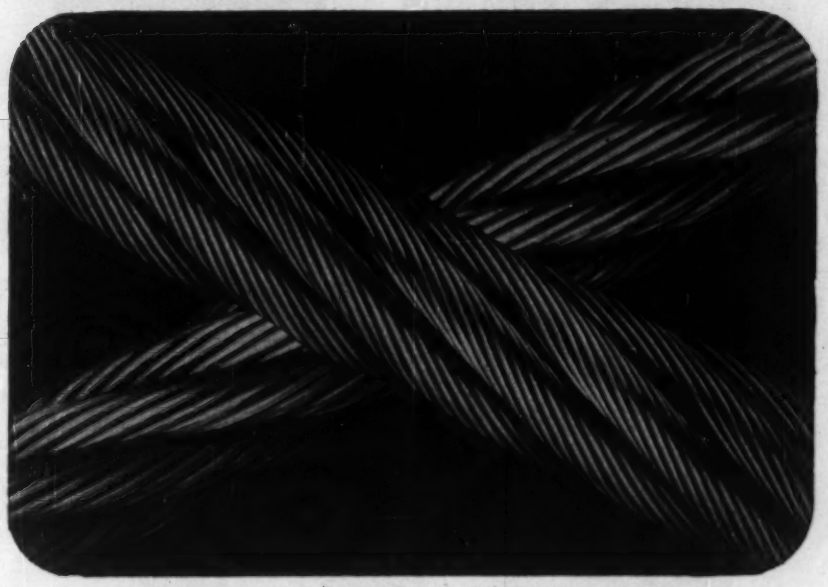

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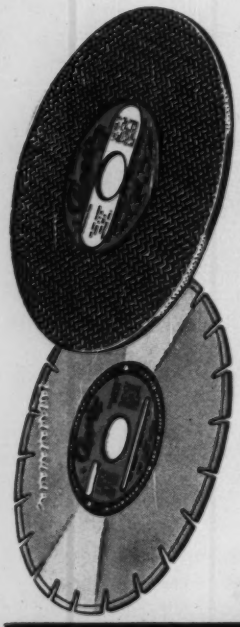

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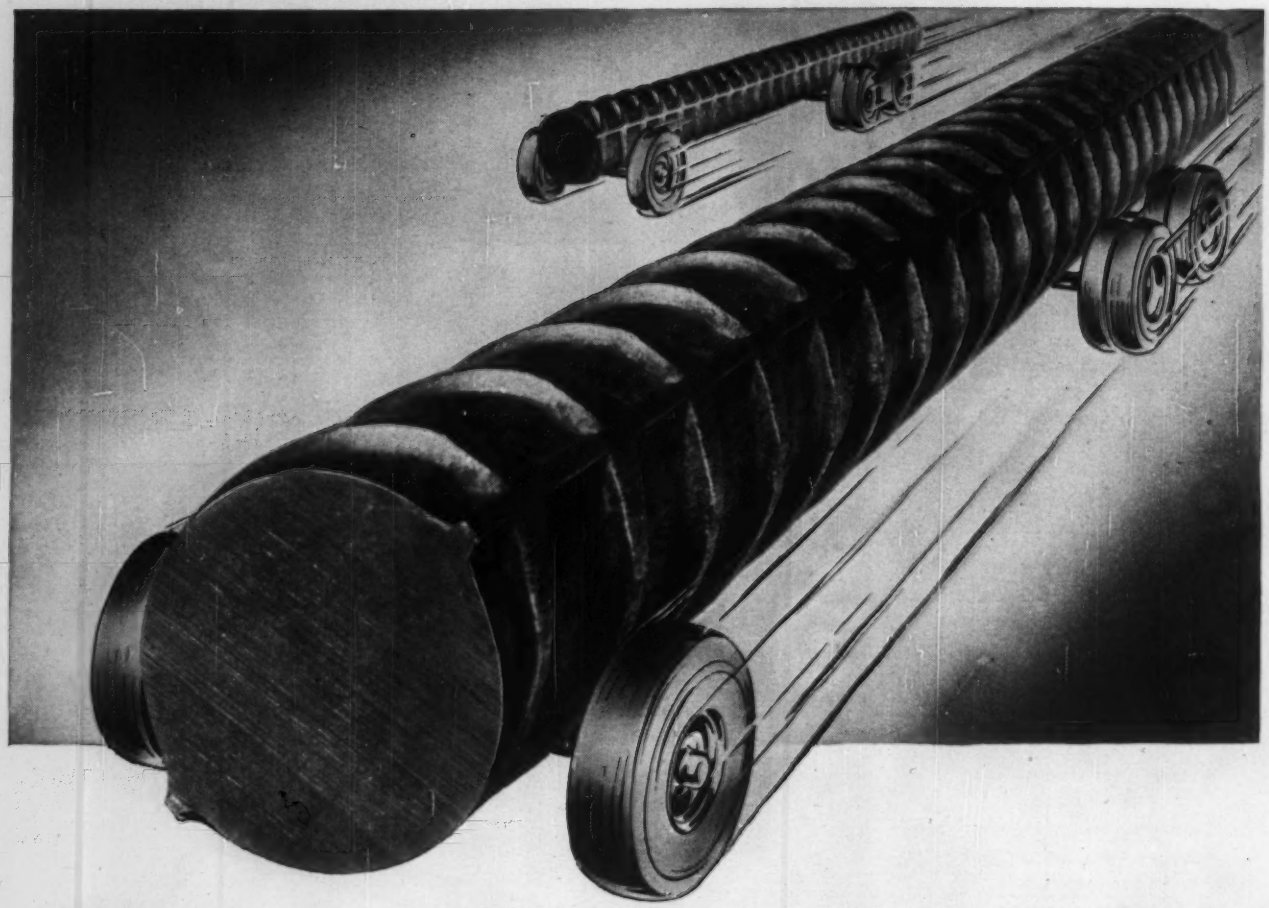

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ENGINEERING NEWS-RECORD

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THE CONSTRUCTION WEEK

WHO STRIKES AGAINST WHAT?—Contractors are reporting a new union weapon in the jurisdictional disputes arsenal.

It works this way: Union "A" and contractor sign wage-hour working condition contract that also includes agreement giving "A's" men right to do certain work. Later, a jurisdictional dispute arises with union "B" also claiming the work. Contractor appeals the Joint Board or NLRB—which may rule against union "A."

But, if the contractor follows NLRB or Joint Board ruling, union "A" may strike against him for violating his contract. Thus, the contract provision can have the effect of barring the contractor from relief through NLRB or the Joint Board.

TOWN IN HOT WATER—Ice cubes don't get a chance to tinkle in water glasses in Glendale, Ariz. (pop. 7,000). The town's fine new well—drilled 2,000 ft deep—provides an abundance of domestic water. But, it comes from the well at 107 degrees and cools but a fraction before reaching the taps in Glendale homes. Cooling towers would help but the town has too many other municipal needs.

ANOTHER USE FOR TV?—Television—already getting serious consideration as a traffic control device—may be employed in operation of St. Lawrence Seaway locks. If tests being conducted by RCA and Army Engineers on the Illinois Waterway prove successful, the system would work this way:

A TV camera would be trained on the lock gates so that one man could watch them on a screen in a main lockhouse. He would operate the gates from a master control point. It would save posting an operator at each gate as is now necessary with such installations.

BREAK FOR CONTRACTORS—Maricopa County, Ariz., has given up force account roadbuilding because its highway engineer is convinced the competitive situation is favorable to getting the work done cheaper by private contractors.

Reducing its work force by 60, the county will confine itself to maintenance. It will save $182,000 a year in salaries and $129,000 in county garage operations.

However, the county will not dispose of any of the equipment now in use, claiming it can be back in the roadbuilding business in 60 days if construction costs take a significant jump or if competition lessens materially.

WORLD'S LARGEST BOILER—Babcock & Wulcox has a contract to design and build the world's largest boiler for a New York City station of Consolidated Edison. The unit will have a capacity of 2,400,000 lb of steam per hour—enough to generate between 300,000 and 375,000 kw. The boiler will be equipped to burn either coal, oil or natural gas or a combination of these fuels.

In a variety of corrosive services

BYERS WROUGHT IRON

serves longer at lower cost per year

The true cost picture isn't given by construction costs alone. It must include *maintenance* costs also . . . and when these are included, the most durable materials have proved themselves as the most economical.

You'll find Byers Wrought Iron Pipe and plate the best material to use when you are building for permanence. The illustrations show a few of the many applications where it is serving successfully for others . . . and where it can serve and save for you. The use of wrought iron *adds only a trifle to the overall cost* of a project, and this small investment is returned many times over in extra service.

Wrought iron lasts longer, at lower cost per year because of its unique structure which resists corrosion and fatigue. Tiny fibers of glass-like iron silicate, distributed through the body of high-purity iron, halt and detour corrosive attack, discourage pitting and rapid penetration. These fibers also anchor the initial protective scale, which shields the underlying metal.

Our booklet, *The ABC's of Wrought Iron,* tells the story of this protection, and how it is bringing piping economy to a variety of applications where corrosion is a threat. Write for your copy.

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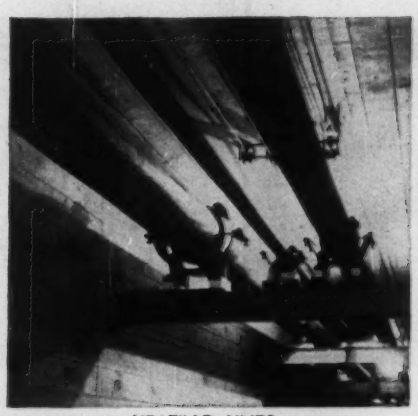

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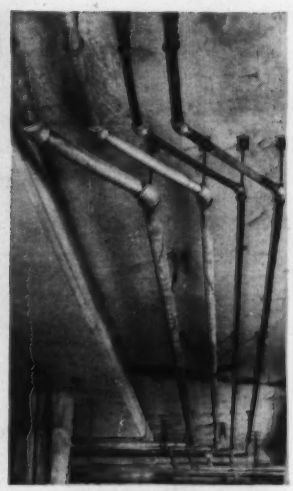
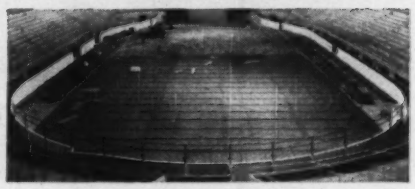
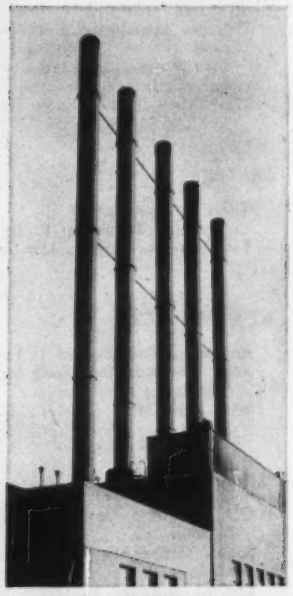


PLUMBING LINES

UNDERGROUND LINES

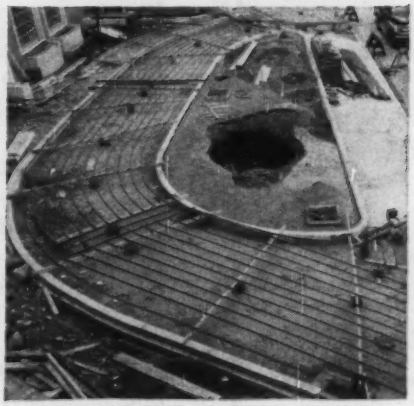


ICE RINKS



STACKS, BREECHINGS

WATER WORKS, SEWAGE



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WASHINGTON OBSERVER

The "businessmen in government" policy of the Administration is under attack. The dispute is largely political. Democrats are charging favoritism—in the Dixon-Yates controversy, etc. And they say business is getting favorable treatment because businessmen doing short tours of duty in Washington are partial to the companies and industries they represent.

Democrats in Congress want to restrict these "dollar-a-year" men. A provision already approved by the Senate Banking Committee would limit these men to advisory duty only. They would not be permitted to make policy nor administer any government program.

The ban would primarily hit the Commerce Dept.'s Business and Defense Services Administration. It would prohibit any construction industry man to head up any division, either on policy or operation. Thus WOC's—people working without compensation—would only be able to advise.

The Administration is opposed to the legislation. Eisenhower likes the system of having representatives from all industries do a short tour for training, get to learn first-hand how government works so they can be drafted in large numbers in case of mobilization. But the idea of trimming WOC wings is getting strong backing, and is well worth watching, to see whether it is adopted this year, or next—an election year.

•

The government's lease-purchase program is on the rise. General Services Administration is negotiating a dozen architect-engineer design contracts for new government buildings. And GSA is seeking Budget Bureau approval for about $70 million worth of new construction around the country.

•

The program is far enough along, for construction bids and awards to be coming up in the fall.

GSA's new list of recommendations includes three new government buildings in the capital. Largest would be a $21-million building in southwest Washington, another a Geological Survey building costing $20 million, and a third for a new Weather Bureau, costing $15.5 million.

After Budget Bureau review, the program will be sent to Congress for an okay from the House and Senate Public Works Committees.

•

Cuts in Federal Housing Administration appropriations will slow up processing of loan insurance for new homes. The Congress allocated the agency only $39 million for its operations, instead of the $45 million FHA requested.

The Southwest and Far West will be most hurt by the cuts, but the time lag in processing applications will spread over the entire country. Some backlogs are building up already, and FHA is expected to be less able to keep up later in the year. The agency had asked for new workers to handle the paperwork, but Congress declined to give the money.

FHA officials admit privately that contractors as well as home buyers will be inconvenienced, and even hurt by the situation. Complaints already are being heard, but agency officials say the full impact of the cutback in appropriations has yet to be felt.

•

Engineers should get a copy of the Atomic Energy Commission's new regulation on safety in handling radioactive material. It is a guidepost for the kind of construction that will be required in private atom plants.

Write to the AEC's Licensing Division, Washington 25, D. C., for STANDARDS FOR PROTECTION AGAINST RADIATION. It covers handling of radioactive wastes in sewage dumping, chemical dilution, and sea disposal, filtration, and monitoring.

The regulation prescribes how much radiation will be permissible, in what concentration in any part of a plant. The standards were drawn up by the National Committee on Radiation Protection. Businessmen and technicians will have 30 days to make comments on the proposal.

In a variety of corrosive services

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serves longer at lower cost per year

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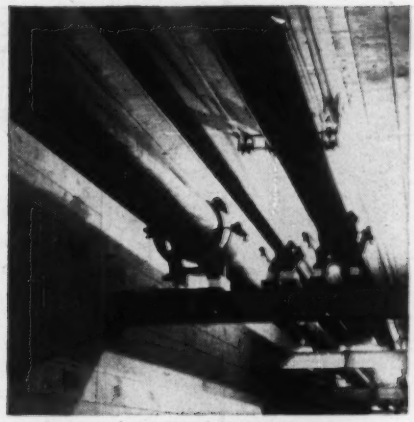

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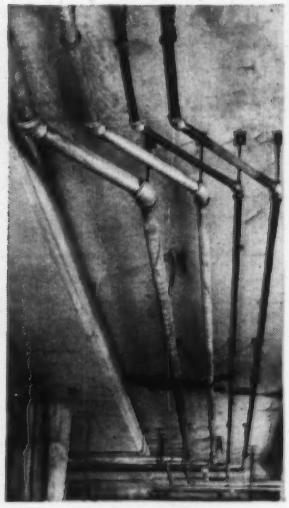

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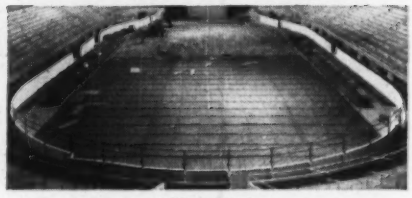
UNDERGROUND LINES



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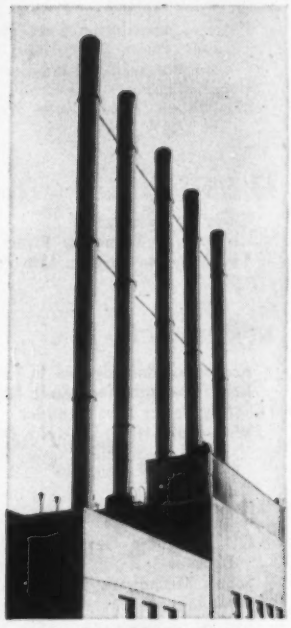
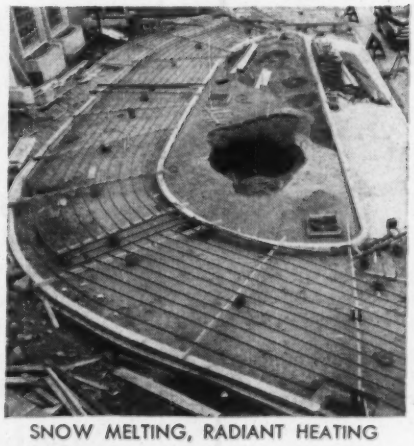


STACKS, BREECHINGS



SNOW MELTING, RADIANT HEATING

AIR CONDITIONING SYSTEMS

BYERS

CORROSION COSTS YOU MORE THAN WROUGHT IRON

WROUGHT IRON

TUBULAR AND HOT ROLLED PRODUCTS

ELECTRIC FURNACE QUALITY STEEL PRODUCTS

WASHINGTON OBSERVER

The "businessmen in government" policy of the Administration is under attack. The dispute is largely political. Democrats are charging favoritism—in the Dixon-Yates controversy, etc. And they say business is getting favorable treatment because businessmen doing short tours of duty in Washington are partial to the companies and industries they represent.

Democrats in Congress want to restrict these "dollar-a-year" men. A provision already approved by the Senate Banking Committee would limit these men to advisory duty only. They would not be permitted to make policy nor administer any government program.

The ban would primarily hit the Commerce Dept.'s Business and Defense Services Administration. It would prohibit any construction industry man to head up any division, either on policy or operation. Thus WOC's—people working without compensation—would only be able to advise.

The Administration is opposed to the legislation. Eisenhower likes the system of having representatives from all industries do a short tour for training, get to learn first-hand how government works so they can be drafted in large numbers in case of mobilization. But the idea of trimming WOC wings is getting strong backing, and is well worth watching, to see whether it is adopted this year, or next—an election year.

•

The government's lease-purchase program is on the rise. General Services Administration is negotiating a dozen architect-engineer design contracts for new government buildings. And GSA is seeking Budget Bureau approval for about $70 million worth of new construction around the country.

•

The program is far enough along, for construction bids and awards to be coming up in the fall.

GSA's new list of recommendations includes three new government buildings in the capital. Largest would be a $21-million building in southwest Washington, another a Geological Survey building costing $20 million, and a third for a new Weather Bureau, costing $15.5 million.

After Budget Bureau review, the program will be sent to Congress for an okay from the House and Senate Public Works Committees.

•

Cuts in Federal Housing Administration appropriations will slow up processing of loan insurance for new homes. The Congress allocated the agency only $39 million for its operations, instead of the $45 million FHA requested.

The Southwest and Far West will be most hurt by the cuts, but the time lag in processing applications will spread over the entire country. Some backlogs are building up already, and FHA is expected to be less able to keep up later in the year. The agency had asked for new workers to handle the paperwork, but Congress declined to give the money.

FHA officials admit privately that contractors as well as home buyers will be inconvenienced, and even hurt by the situation. Complaints already are being heard, but agency officials say the full impact of the cutback in appropriations has yet to be felt.

•

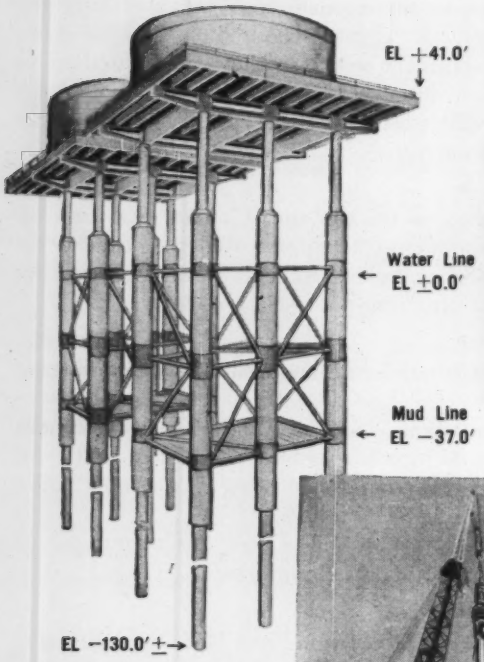
Engineers should get a copy of the Atomic Energy Commission's new regulation on safety in handling radioactive material. It is a guidepost for the kind of construction that will be required in private atom plants.

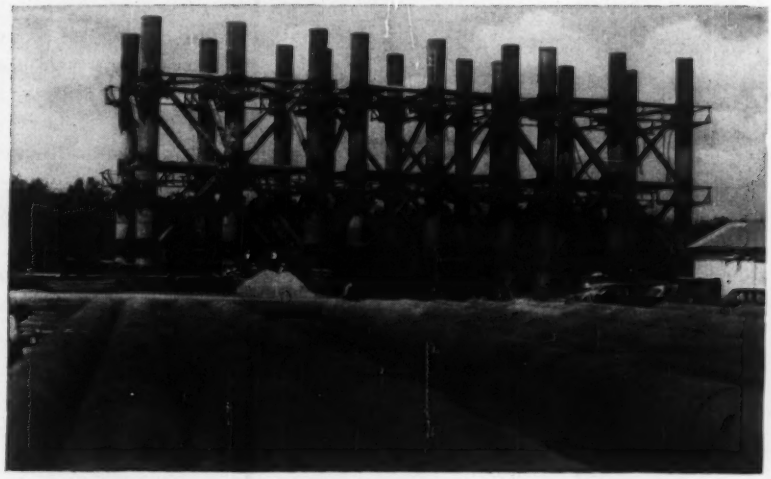
Write to the AEC's Licensing Division, Washington 25, D. C., for STANDARDS FOR PROTECTION AGAINST RADIATION. It covers handling of radioactive wastes in sewage dumping, chemical dilution, and sea disposal, filtration, and monitoring.

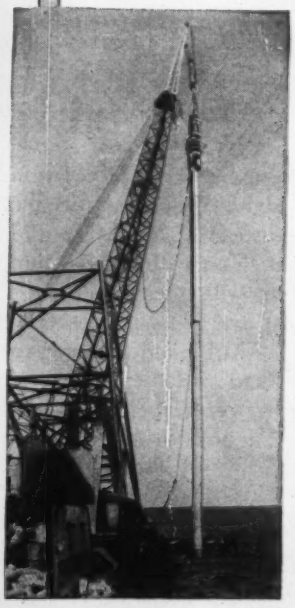
The regulation prescribes how much radiation will be permissible, in what concentration in any part of a plant. The standards were drawn up by the National Committee on Radiation Protection. Businessmen and technicians will have 30 days to make comments on the proposal.

Pioneering IN PILING PROGRESS

192-FT.-LONG PRECAST, PRESTRESSED CYLINDER PILE AND PRESTRESSED JACKET ASSEMBLY HIGHLIGHT TANK PLATFORM CONSTRUCTION IN GULF OF MEXICO







Owner: **MAGNOLIA PETROLEUM COMPANY**
Tank Battery Platform, 35 mi. offshore in Gulf of Mexico

Entire Platform Structure Designed by **RAYMOND CONCRETE PILE COMPANY**, New York

Components fabricated by **GULF PRESTRESSED CONCRETE PRODUCTS**, Morgan City, La.

General Contractor: **J. RAY MC DERMOTT, INC.**; Harvey, La.

● Few construction principles have presented a broader opportunity for engineers and constructors than has prestressed concrete. Example of pioneering in this field is Raymond Concrete Pile Company's prestressed hollow cylinder pile, used in lengths up to 192 ft., in a tank battery platform for Magnolia Petroleum Company, 35 miles offshore in the Gulf of Mexico.

Photo, at left, shows 36-in.-diameter cylinder pile, 192 ft. long, standing unsupported 172 ft. above mud, in which it had penetrated 20 ft. under its own weight.

Equally interesting is the precast, prestressed concrete assembly which serves as bracing jacket. The jacket structure, shown above, consists of 54-in. prestressed hollow cylinder piles, braced with concrete-coated pipe. Assembled on barges, the jacket assemblies, each weighing 230 tons, were floated to location, where lift was made and the barge moved out from under.

The prestressed 36-in. cylinder piles were also barged to the site, lifted by crane, lowered through the jacket piles, and driven to required resistance. Finally, prestressed deck slabs were placed in position, ready for installation of two 5,000-barrel tanks.

These piles are reinforced in the conventional manner, then centrifugally cast by spinning. Cylinders are spun in 16-ft. lengths, fitted together, and prestressed by post-tensioning cables run through horizontal openings left in the cylinder walls.

Special methods of joining the cylinders, post-tensioning the steel, and grouting the wire cables produce a homogeneous product of unusual strength and durability.

As is so often true in milestones of construction progress, Lone Star Cement was used, because quality attracts quality.

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Compromise Highway Bill Set For Fast Action in Congress

Measure earmarks $24 billion for interstate system over 12 years; boosts taxes on fuel, tires, trucks, and buses

Passage of a compromise highway bill—providing for federal outlays totaling $34 billion over the next 12 years for the nation's first large-scale roadbuilding program—seemed assured this week.

While there could be a last-minute hitch, both parties appeared bent on pushing through the measure that calls for increased federal taxes on gasoline, diesel fuel, truck-size tires and tubes, and trucks and buses.

Hearings being held this week by the House Public Works Committee were mainly for the record—to give those affected a chance to protest the tax increases. The White House already has given an informal go-ahead to the Republicans and Democrats who sweated out the compromise last weekend.

Under the new bill, $1.2-billion of federal money would be made available during the year beginning July 1, 1956, for construction on the interstate system; states, with some exceptions, would put up $1 for every $9 of federal spending. This year, the federal government has some $175-million for the interstate system; states must put up $2 for every $3 of federal money. During the 12-year period, as much as $2.5-billion in federal funds would be made available in a single year; over the 12-years, $24-billion of federal funds would be spent on the interstate system.

Total federal grants for other roads would increase from this year's $700 million by $25 million each year, bringing the figure to $1 billion for the final year of the 12-year program.

Raising of revenues was the big knot which the new compromise has now untied. The new bill calls for:

• **Gasoline tax**—Present federal levy of two cents per gallon, collected by the refiner at the time of sales to distributors, goes up to three cents. Estimates indicate payments to the Treasury will rise by $500 million during the first year.

• **Diesel tax**—Present excise of two cents per gallon goes to six cents. Estimates show increase payments to Treasury of $50 million during the first effective year.

• **Other levies**—These fuel taxes are the major contributors to the "pay-as-you-go" bill. Other taxes, however, also are being raised.

Tires larger than 8½ x 18, now subject to the five cents per lb tax paid by the manufacturer on all highway tires regardless of size, will be subject to a tax of 15 cents per lb. A 9 x 20 12-ply tire weighing about 94 lb on which the tax is now about $4.70, would be taxed $15.50 under the new bill.

Tubes for these same size tires would also be taxed 15 cents per lb.; now, all tubes are taxed a flat nine cents per lb. Thus, a 9 x 20 tube, now taxed, say 90 cents, would be taxed about $1.50.

Camelback for re-treading would be taxed for the first time. The tax would be paid on the total weight of a recapped tire larger than 8½ x 18. The tax, to be 7½ cents per lb., would amount to $7.50 for a 9 x 20 tire weighing 100 lb.

Trucks, trailers, and buses—now subject to a manufacturers excise of 8% of the price, rises to 10%. On a truck selling for, say, $25,000, the tax would be upped from to (passenger cars are already taxed at a 10% rate.)

Over the 12 years covered by the highway construction program, it is estimated that the additional revenue —from the higher tax rates and increased highway use—would yield $12 billion in new revenues to help finance the $34-billion total federal expenditure and roads. Present highway user taxes—on motor fuel and oil-are figured to bring in about $22 billion during this period, which—added to the proposed increases—brings federal highway user revenues up to the $34-billion total federal outlays contemplated.

• **Truck size-weight limits**—A ban on federal grants to any state that raises its truck size and weight limits above (1) state limits in effect as of Jan. 1, 1956, or (2) the weight and size limits recommended by the American Association of State Highway Officials in 1946. States with load-size limits stricter than the officials recommend, could raise them to those levels.

• **Relocating utilities**—Owners of gas pipelines, telephone, telegraph, and electric lines would be reimbursed up to 50% of the cost of re-locating their lines as a result of re-building interstate highways in states which now require utilities to pay all such costs.

• **Toll roads**—There's no encouragement for toll turnpikes; no federal funds are to be advanced against toll roads already built or to be built.

• **Quick agreement seen**—The legislation was expected to get approval by the House Public Works Committee sometime during the week.

Higher taxes are the Democrats answer to President Eisenhower's statement that he would take a bill that provided for increased revenues to pay for the increased spending; his primary thought was to get the needed highways without increasing the federal deficit.

His own proposal—worked up by the so-called Clay Committee—had been flatly rejected by the Senate, and Republican leaders in the House of Representatives decided against putting up a fight for the Administration's key proposal: To create a new highway corporation to float bonds that would be considered to be outside the federal debt.

The tax increases called for in the present bill are backed solidly by the House Democratic leadership. They were adopted after protests arose over much steeper tire, tube, and re-tread taxes suggested in earlier proposals worked out by the House Democrats. Under this first schedule gasoline and diesel taxes were fixed at the rates still called for in the compromise bill; but tire and tube taxes would have been 50 cents per lb, re-treaded tires would have paid 20 cents per lb.

The original proposal called for no increases on trucks, trailers, and buses.

The softening of the tax increases won over a number of Republicans and Democrats who had opposed any tax increase to pay for the new highway spending. Senators, led by Albert Gore, (D., Tenn), are expected to go along with the House version.

New Starts Upped

House, Senate conferees agree on funds for 108 water resources projects

Both Houses of Congress have built up the roster of new construction starts in the public works appropriation bill to three times the number requested by the President, who asked for 36 in all.

When the bill came out of House-Senate conference late last week, it carried 108 new starts with a total estimated cost of more than $1.3 billion.

Only three proposed projects were dropped by the conferees: The $95-million deepening of the Delaware River, recommended at the last minute by the President; the $137-million Keystone Dam in Oklahoma, and the $23-million Pommede Terre Reservoir in Oklahoma. Elimination of these three reduced the list of new starts to 108, costing in excess of $1.3 billion.

Approved by the conferees were funds to start construction of big Army Engineer projects in these states—Alabama: Fort Gaines lock and dam, $86 million; Arizona: Painted Rock Reservoir, $35 million; Arkansas: Dardanelle lock and dam, $95 million; Georgia: Hartwell Reservoir, $94 million; Illinois: Calumet-Sag Channel, $80 million; Indiana and Kentucky: Markland locks and dam, $70 million.

Also, Oklahoma: Eufala Reservoir, $153 million, and Oolagah Reservoir, $31 million; Oregon: Cougar Reservoir, $37 million, and Hills Creek lock and dam, $32 million; Texas: McGee Bend Dam, $46 million; Washington: Ice Harbor lock and dam, $142 million.

An initial sum of $4 million to start the $95-million Yellowtail Dam of the Reclamation Bureau in Montana also was approved. Yellowtail was authorized in the 1944 Flood Control Act as part of the Missouri Basin Project, but funds were delayed because of a controversy developed over condemnation of the land, most of it owned by Indians.

Last year the House passed a resolution calling for Yellowtail construction to start at the earliest moment. Since then the Montana Power Co. has made a partnership offer to buy the falling water. The Senate Interior Committee held hearings on the offer this session and asked the Interior Dept. to study partnership possibilities.

• **Upper Colorado**—Congress will do well to enact two or three major water and power bills this year. Because unfinished legislation does not die at the end of the session, but carries over until next year, many live proposals will have a running start toward enactment next session.

Those with the best chance of passage this year include the $760-million Upper Colorado River water storage project, passed by the Senate and reported by the House Interior Committee. Heavy opposition will continue from Californians and economizers, but proponents of the legislation think they have enough votes for passage.

Next best bet for action is the $220-million Trinity River project in northern California. This measure has passed the House and is due for a Senate Interior Committee hearing this week. Actually, $1 million to start construction already has been voted, just in case the project is approved as expected.

• **Other projects**—Prospects for quick approval of other projects are less bright. The $40-million Washita Basin Project in Oklahoma has cleared the Senate, but may fail to get House approval because of the short time remaining.

Little hope remains this year for approving the $156-million Frying-Pan-Arkansas water diversion project in Colorado or converting to partnership projects the previously authorized Green Peter and Cougar flood control dams in Oregon.

• **Hells canyon**—Controversial Hells Canyon legislation comes up for four days of hearings this week before the House Interior Committee. A duplicate Senate proposal, calling for a federal high dam at the Hells Canyon site on the Snake River, is tied up for the time being in the Interior Committee.

Sen. Wayne Morse got some 30 sponsoring signatures for the bill, but now he can't corral the necessary committee votes to report the measure, which has already been approved by a subcommittee. There is little chance of passage this session.

• **Niagara**—Niagara power development can be written off for this session. The Senate Public Works Committee is holding hearings this week on Sen. Herbert Lehman's bill calling for development by the New York State Power Authority, but chances of Senate action this year are practically nil. On the House side, hearings have been completed, but Chairman Charles Buckley probably won't press for action unless he gets a committee majority to vote for the New York State project. Most of the committee appear to favor development by five private power companies.

Gustave Magnel Dies; Leader in Prestressing

Prof. Gustave Paul Robert Magnel, 65, of the University of Ghent, who with Eugene Freyssinet of France was one of the two leading world figures in the prestressing of concrete and was inventor of a widely used system for prestressing, died last week at Ghent, Belgium.

Well known in the United States both for his interests in prestressing and for his peppery speeches in the interest of improving concrete work, Prof. Magnel was designer of the Walnut Lane Bridge in Philadelphia—one of the first prestressed concrete bridges in the U. S. He designed many spectacular structures in Belgium.

In February 1954, (ENR Feb. 25, 1954, p. 23) he wound up a whirlwind lecture and inspection tour of the United States and Canada with a speech before New York's Concrete Industry Board, in which he characterized American concrete as "soup" and pointed to poor concrete practices as the principal reason for slow progress of prestressing on this side of the Atlantic Ocean.

A native of Belgium, Prof. Magnel was a civil engineering graduate of the University of Ghent, where he became a professor of civil engineering in 1937.

In addition to many European professional organizations, he was a member of the American Society of Civil Engineers, the American Concrete Institute, the American Society for Testing Materials, and the Institution of Military Engineers of the U. S.

Florida Grants Road Bureau "Full Control" of Traffic

Starting on August 3, Florida's State Road Department will have powers far beyond those of most state road bureaus, under terms of a new "charter" adopted by the state legislature.

Among the new powers is absolute control of traffic on all state roads—including those sections passing through municipalities. This control will include the regulation of speed limits, parking, marking and traffic signals.

A second major power granted the department will be the right to forbid a contractor to bid on a state highway job, if he has failed to complete a previous job on time.

A third item is a provision that every prime contractor for the department must perform at least 50% of the work with his own forces; must file evidence of financial responsibility and available equipment.

Formwork Failure Findings

Lateral force caused New York Coliseum formwork collapse —District Attorney urges code revision on falsework design, use of motorized buggies and better qualified inspectors

Collapse of the exhibition floor of the New York Coliseum when concrete was being placed on May 9 was caused by inability of the falsework to resist lateral forces, according to Frank S. Hogan, District Attorney for New York County. He said, however, that there was no evidence of criminal negligence.

To prevent similar failures in the future, he recommended changes in the law affecting formwork design and construction, use of motorized buggies and qualifications of building inspectors.

The Coliseum is being erected on Columbus Circle, between 58th and 60th Streets, in New York City. The lower portion of the building, of reinforced concrete construction, will contain exhibition areas. Projecting above it will be a 20-story steel-framed office tower.

The main exhibition floor, which was being concreted when the falsework gave way, killing one man and injuring about 50 others, is flatplate metal-pan waffle construction, with solid slabs in the vicinity of columns. The collapse dropped about 1,000 tons of freshly placed concrete 22 ft to the street-level exhibition area and destroyed several bays of formwork not yet concreted (ENR May 12, p. 23).

• **Two-tier falsework**—Forms for the floor slab were supported on two tiers of shores. Bottom shores consisted of dressed, wood 4x4s, spaced 2 ft 6 in. in one direction and 4 ft in the other. They were capped along the short spacing with horizontal 4x4s and cross braced in the other direction with horizontal 1⅛x9-in. boards. At midheight, the posts were braced horizontally with 1x4s in two directions. Adjustable metal shores were placed directly over the 4x4 posts to form the second tier.

Spanning the 2 ft 6 in. between the metal shores were 4x6-in. girts, which supported 2x5 ribs spaced 10 in. to 12 in. c-c. Plywood ⅜ in thick was laid across the ribs to receive the metal pans for the waffle slab.

In a statement issued July 5, the district attorney pointed out that there was little diagonal cross-bracing or horizontal bracing on the jacks.

• **Speed limit for buggies**—The concrete mix was transported to the forms in motorized buggies, which weigh about 3,000 lb. each when fully loaded. At the time of the collapse, there were eight or nine of the buggies transporting concrete to the area and about 500 cu yd of concrete had already been placed that day.

The district attorney said the buggies were not equipped with governors to regulate their speed or with speedometers. He called attention to a state labor law requiring buggies to be so designed or equipped that they cannot travel faster than 12 mph on a level surface. He recommended that the city building code be amended to require approval by the Board of Standards and Appeals before powered buggies can be used.

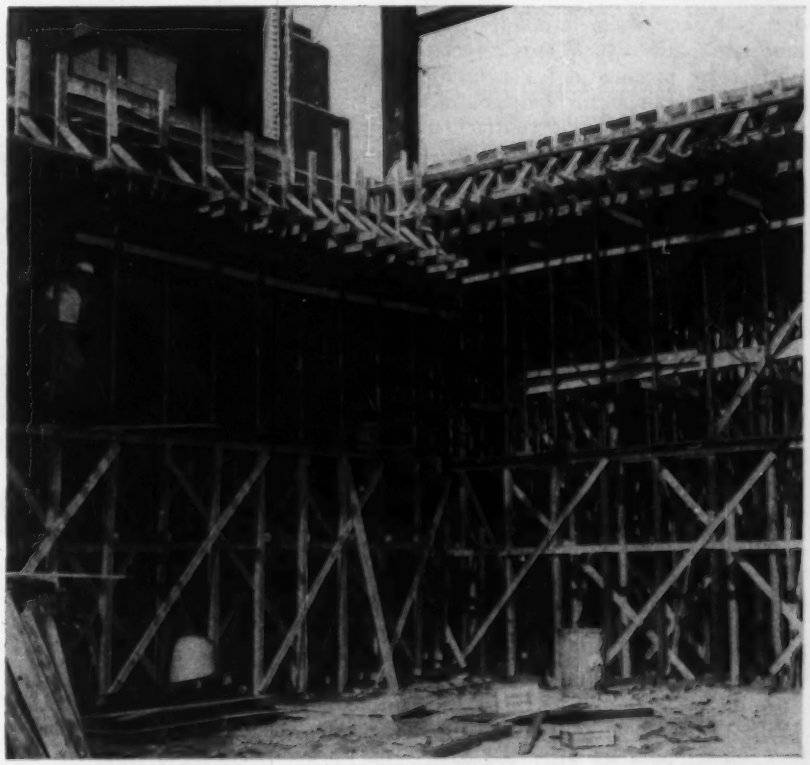
• **Lateral forces responsible**—The collapse, Hogan believes, was caused by "the inadequacy of the temporary supporting structure under the pressure of a horizontal or oblique thrust on the main exhibition floor. Such a thrust was created by the combined and sustained vibrations due to the movement and sudden stopping of the buggies, the dumping of the concrete, the operation of the concrete agitating machines and the other activities on the floor."

"If there had been sufficient diagonal, horizontal and end bracing of the temporary supporting structure," he said, "the collapse could have been prevented entirely, or at worst, its area held to a minimum."

Hogan recommended that the building code be amended to require that falsework for reinforced concrete construction be designed by a registered engineer or architect and the plans filed with the Department of Housing and Buildings have an affidavit stating that construction will comply with the plans submitted.

New two-tier shoring in the Coliseum is braced horizontally and diagonally on both tiers (photo below).

• **Inspectors should be engineers**—The district attorney also called attention to the fact that the inspector of carpentry and masonry of the Department of Housing and Buildings who was assigned to this project is a bricklayer by trade and not an engineer. On an average, this inspector visited 15 buildings under construction per day. He made an inspection of the Coliseum four days prior to the collapse. Hogan consequently recommended that qualifications for building inspectors should be higher and the number of inspectors should be sufficient to handle the volume of work.



TWO-TIER SHORING now being used to support the formwork for the main exhibition floor of the New York Coliseum, 22 ft above the street-level floor, has diagonal bracing in both tiers.

Licensing Upheld

Court rules Arkansas law applies to firms working on federal airbase jobs

Arkansas' 16-year-old law governing the licensing of contractors extends also to contractors doing work within the state for the federal government on federal land, the State Supreme Court has ruled.

A unanimous decision affirmed the conviction of five out-of-state contractors in a Pulaski County Circuit Court. The five firms were engaged in work on U.S.-owned airbases at Fort Smith and Little Rock, and their action in appealing $200 fines imposed by the lower court was joined by the U.S. Department of Justice. Justice Department attorneys argued that the state law directly interferes with the performance of federal functions and makes out-of-state contractors reluctant to submit bids because of the necessity of first registering under state law.

"Where we used to get up to 50 bids on a job," said the Justice Department brief, "now we get five or six. Certainly, this situtation is against the public interest."

But Chief Justice Lee Seamster said:

"The fact that each appellant had a contract . . . with the United States Government to construct buildings on United States Government property does not grant them immunity from the state's law, which requires contractors to procure a . . . license before they can legally bid, contract or perform work on a contract in Arkansas.

"An independent contractor is not clothed with governmental immunity solely because of his contactual relationship with the federal government."

The five firms involved in the action are: Engineering Construction Corp. of Illinois; Charles Ramsey & Co., the Tecon Corp., Ramsay & Leftwich, and Leslie Miller, Inc., all of Texas. The latter four firms are engaged in work at Little Rock Air Force Base, the first on an Air National Guard base at Fort Smith.

• **New York firm loses out**—It was also disclosed that a New York construction firm, which had a contract to drive 2,400 pilings for the Dixon-Yates plant at West Memphis, had withdrawn from the project because it did not have a license to perform work in Arkansas.

McArthur Concrete Piling Corp., gave up its contract after the State Contractors Licensing Board took legal steps to prevent the firm from beginning work.

At the start of dewatering . . .

One week later

Two Miles of St. Lawrence Dewatered

Top picture was taken just before Mannix-Raymond Ltd., Montreal, began pumping-out operations to dewater a two-mile stretch of the St. Lawrence River between the Canadian shore and Barnhart Island on the U. S. side, site of the international powerhouse near Cornwall, Ont. Following the contractor's completion of the two cofferdams (ENR June 9, p. 30), four pumps were started on June 15 to pump out water at rates up to 80,000 gpm.

By June 23 when the dewatering was completed (see bottom picture), an estimated 65,000,000 gallons had been pumped out. Contractors on both sides of the border immediately began excavation for the powerhouse. Iroquois Constructors Ltd., Toronto, holds the contract for the section of the powerhouse being built by the Ontario Hydro-Electric Power Commission. B. Perini & Sons, Framingham, Mass., and associated companies, have the contract for the U. S. section.

Construction Bills

Highway legislation gets top priority in Illinois Chicago projects aided

Highways, public buildings, and water supply took the construction spotlight in the 1955 Illinois legislature.

From the standpoint of dollar volume, the Division of Highways of the Department of Public Works and Buildings got top billing. The division's total budget for the next two years is $338 million. Of this amount, about $250 million is earmarked for construction, $50 million for highway maintenance, $6 million for traffic control.

A total of 138 bills affect the highway department.

One bill, not yet signed by the governor, extends from 45 to 50 ft the permissible maximum length of truck-trailer combinations. The 50-ft length conforms with that permitted by neighboring states and is recommended in the Uniformed Code of AASHO.

A companion bill increases the overload capacity on each axle from the present 350 lb to "5% of the maximum weight but not more than 1,000 lb."

Another important piece of legislation gives the highway department special authority in securing right-of-way and relocating utilities. This is expected to save the highway department both time and money. On one project, the Northwest Highway in Chicago, a highway department spokesman estimated the legislation could save $10 million in construction costs.

Other bills adopted by the legislature would: relieve the state from furnishing bond in eminent domain cases, limit the degree of liability of the contractor when traffic accidents occur on highway improvement projects opened to traffic but not yet officially accepted by the highway department, and repeal existing legislation that required roadbuilding agencies other than counties to prepare long-range roadbuilding programs as a requisite for securing state aid.

• **Toll highways**—Three bills adopted by the legislature affect the Illinois State Toll Highway Commission. One requires payment of prevailing wage rates on toll road construction, matching a similar requirement on other state roads.

Another bill reimburses the state for $436,000 loaned to the toll road commission for preliminary studies and surveys, and a third measure provides for appointment of a 25-man advisory committee to guide the commission on matters of policy and administration.

• **Chicago projects**—Two important Chicago construction projects also received a helping hand from the legislature. A series of three bills creates a Metropolitan Fair and Exposition Authority and provides for building a $34-million exposition and convention hall. Revenue bonds will finance the project.

The second big Chicago area project is the $245-million expressway system in Chicago and Cook County. The legislature authorized a $245-million bond issue to permit completion of the 39-mi expressway system in five years instead of 15 to 20 years at the present rate of construction. Bonds will be retired by money received from the state and federal government as the county's share of gasoline taxes.

• **Water supply and sanitation**—Among the legislative measures in the field of water supply and sanitation is one creating a 10-man commission to study drainage and storm water conditions throughout the state, and particularly in Cook County.

Other commissions to be appointed, their functions, and funds for expenses are: A 15-man commission to investigate "the economic and social impact" of atomic power on the citizens of Illinois ($10,000 appropriation); a 10-man committee ($5,000) to investigate integration of sewer systems between municipalities, drainage districts, etc.; and a 11-man commission ($12,500) to study drought conditions in Illinois.

The legislature also approved measures giving water boards authority to issue and sell revenue bonds to replenish water supply; permit the sale or lease of township waterworks or sewage systems; permit use of sewer revenue bonds to pay for sewage works improvements other than sewers only; permit cities to hold a referendum on the policy of introducing fluorides in domestic water supply. Results of this referendum would be only advisory.

AEC Plant Completed

F. H. McGraw & Company announced formal completion of the $1-billion atomic energy facility at Paducah, Ky., last week. Although operating units of the huge gaseous diffusion plant were completed early last winter, the "finishing touches" were put on this spring.

The job was started in January, 1951 and required approximately four years to build. Nearly 23,000 workers were employed during the peak of construction in 1953.

New Price Tags

Revised San Diego sewage project plans would cost at least $10 million more

An engineering report recommending alternative sewage disposal construction ranging from $26 million to $30.9 million has been submitted to the City of San Diego—13 months after voters defeated a $16 million sewage disposal bond issue.

The $16 million plan, which the voters turned down on the basis of arguments that the estimate was too low, called for building new trunk line sewers, a sewage treatment plant on Point Loma and a 7500-ft outfall. The new $30.9 million proposal calls for similar construction, with the addition of a trunk line to serve National City, Chula Vista and Imperial Beach.

A second alternative, most favored by the new report, would cost $26.8 million and would provide for a sewage plant and 11,000-ft outfall at Imperial Beach, near the mouth of the Tia Juana River. Still another scheme would provide for plants and outfalls both at the Imperial Beach and the Point Loma sites and would cost $26 million.

The $16 million estimate in 1954 was based on a study made earlier by a board of engineers composed of A. M. Rawn, chairman, Charles G. Hyde and David Caldwell (ENR Oct. 9, 1952, p. 68).

The new report, financed by the city because of objections voiced by opponents last year, was prepared by John A. Carollo, of Headman, Ferguson & Carollo, Phoenix, Ariz.; Adolf H. Koebig Jr., of Koebig & Koebig, Los Angeles; and Richard R. Kennedy, of the engineering office of Clyde C. Kennedy, San Francisco.

The increase in cost, as between the new report and former recommendations, ranging from $10 to $15 million, becomes a major question for San Diego taxpayers. San Diego councilman variously described the new cost figures as "staggering", "alarming", and a matter of "deep concern."

The city is under order by the Regional Water Pollution Control Board to cease polluting the bay, and the new engineering report agrees with the Rawn report that no economically feasible plan can be devised to use the bay for waste discharge. It is contended that the Point Loma site is the most economical because it is the only site on the San Diego County coast where sewage can be discharged into deep water without a long outfall. Off Imperial Beach the ocean floor is a shelf extending many miles.

Centers Get Funds

Loans assure early start for food, transportation centers in Philadelphia

Philadelphia moved ahead last week on two major projects, a multi-million-dollar transporation center that will be part of the huge mid-town Penn Center development, and a proposed $100-million food distribution center for the southeast section of the city.

Construction of the transportation center was assured when loans totaling $15 million were advanced by the Penn Center loan pool. This group consists of eight Philadelphia banks and the Penn Mutual Life Insurance Co. which will arrange permanent mortgage financing when the structure is completed.

McCloskey and Co., general contractors, will build the transportation center, which will cost somewhere between $20 million and $25 million to complete.

• **Early start seen**—Matthew McCloskey, who will also head the center, expects excavation work to start within a week, with the first steel scheduled for erection in three months. The entire center is slated for completion early in 1957.

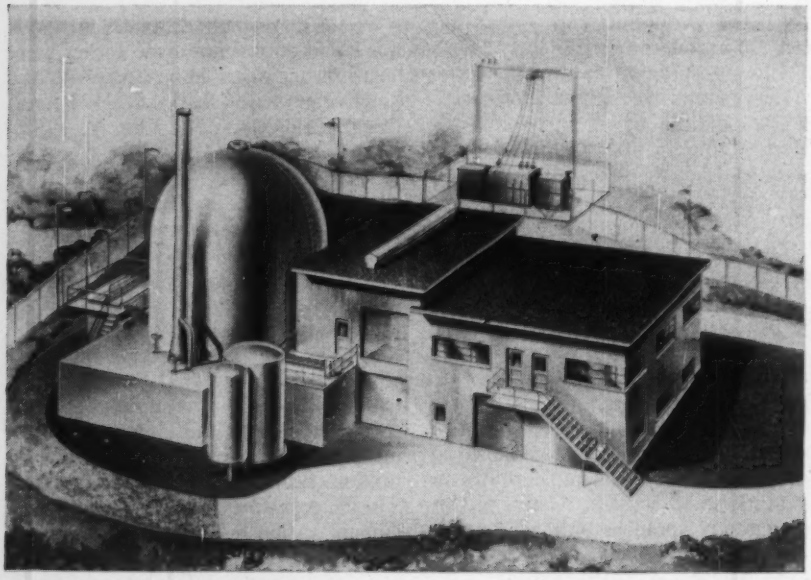
The Pennsylvania Railroad will occupy a substantial portion of the 18-story office building. This building will surmount the eastern end of the center, atop four block-square floors devoted to transportation and parking facilities.

Bus loading platforms and other terminal facilities will be below street level, under a four-level parking garage that will serve the entire Penn Center and a multi-million-dollar hotel now being built just across Pennsylvania Boulevard.

• **Food center gets funds**—Meanwhile, Philadelphia's City Council voted its first funds for the proposed $100-million food distribution center.

The council made $2,573,000 available to the Philadelphia Redevelopment Authority for land acquisition, site clearance, fill, and engineering studies. Of the total, $2,444,350 represents a "councilmanic loan," while the balance will be taken from operating revenues.

The food distribution center will be developed by a non-profit corporation, sponsored by the Greater Philadelphia movement.



'Package' Power Plant Nears Construction Stage

Construction is scheduled to start in September on the U. S. Army "portable" power reactor, shown here in outline and cutaway. Alco Products, Inc., prime contractor, selected Stone & Webster Engineering Corp. to design and build the initial nuclear plant, at the Army's Engineering Research & Development Laboratory, Fort Belvoir, Va.

The nuclear reactor and steam generator will be housed in a vaportight steel container 36 ft in dia by 64 ft high. This container will prevent escape of fission products. Heat from the reactor will produce steam in a steam generator. This steam will flow to a 2,000-kw turbine-generator located in an adjacent powerhouse. Circulating water for the condenser will be taken from the Potomac River. Electricity generated by the installation will be utilized at Fort Belvoir.

This may be forerunner of other "portable" nuclear power plants, which could be built far from sources of fuel.

Seaway Port Plans

Cleveland, Toledo ready to act; Indiana studies privately financed port

With the St. Lawrence Seaway acting as a spur, Great Lakes states are moving ahead rapidly with plans for major port improvements.

Governor Lausche of Ohio has signed a new measure which authorizes cities and counties—or city-county combinations—to create port authorities along Lake Erie and the Ohio River.

He predicted a vast commercial growth for cities "that prepare themselves for the inevitable trade that will come to the world ports." The governor urged communities to set aside local rivalries to take full advantage of opportunities presented by the Seaway. His remarks were aimed at a dispute which has delayed organization of a projected Toledo-Lucas County Port Authority.

Meanwhile, the present Toledo Port Authority came up with a plan for a $20-million waterfront industrial district along the south shore of Maumee Bay in East Toledo. Construction would include bulkheads for three slips along the waterfront of the entire district.

Cleveland, Ohio, also is seriously considering port improvements. A survey conducted for the city by James C. Buckley, Inc., New York City terminal and transportation consultants, recommended that Cleveland spend $28.9 million to meet port demands when the St. Lawrence Seaway is completed. As a first step, the city is now considering an $8-million Seaway improvement bond issue that would go to the voters for appeal.

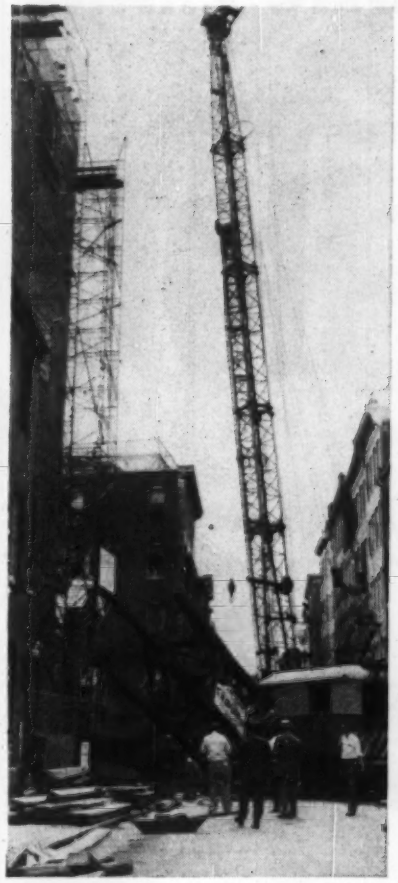
In Indiana, a scheme for construction of a $60-million seaport on Lake Michigan with private capital was called legally feasible by and advisor to Governor George N. Craig.

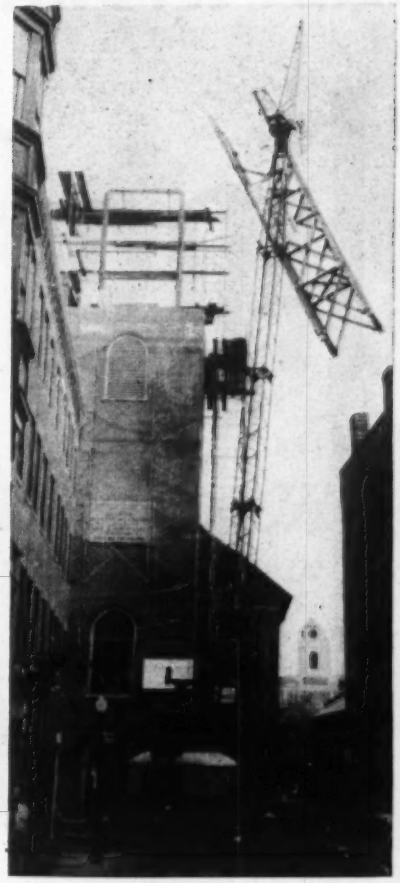
Location of the Port of Indiana is planned almost midway between Michigan City, Ind., and Gary. Steel mills would use the port heavily.

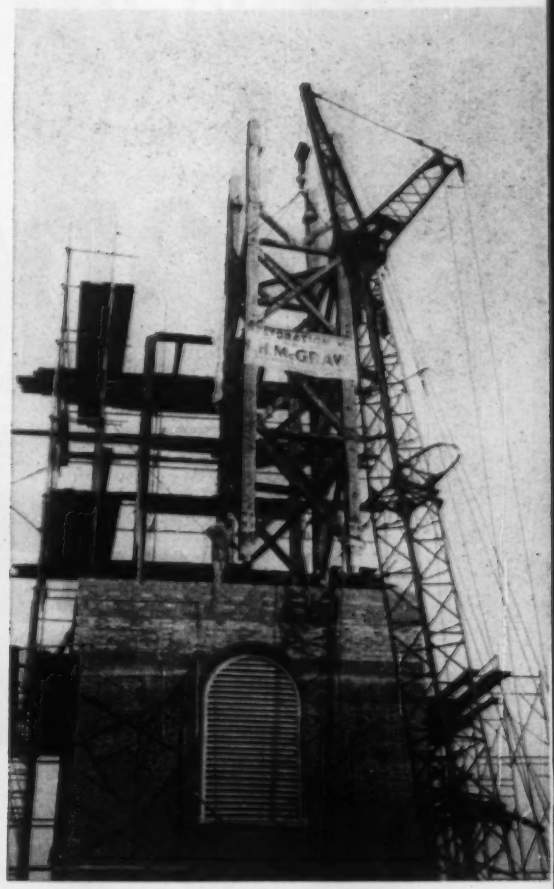
Money for the project reportedly would come from three sources: New York Central Railroad, National Steel Co., and the Murchison financial interests, owners of the Indianapolis Water Company. They would put up the initial funds for construction.

After the port is built, the State Board of Harbors and Terminals would acquire the facilities through a bond issue, to be retired by port revenues.

The federal government would be expected to build a breakwater and to dredge the harbor.







TIGHT QUARTERS—In a narrow Boston street, two cranes maneuver into position a 46-ft, 10-ton white oak frame for a new steeple for Old North Church. After a 78-ft hoist to the top of the steeple's brick base, workers jacked the frame into place on two steel crossbeams. The tower then was faced with redwood and louvered windows installed.

Historic Landmark Restored

A 70-ton crane with a 180-ft boom —looking a bit incongruous in Boston's narrow Salem Street, which once felt the tread of Paul Revere's horse— last week hoisted a new spire to the top of Old North Church.

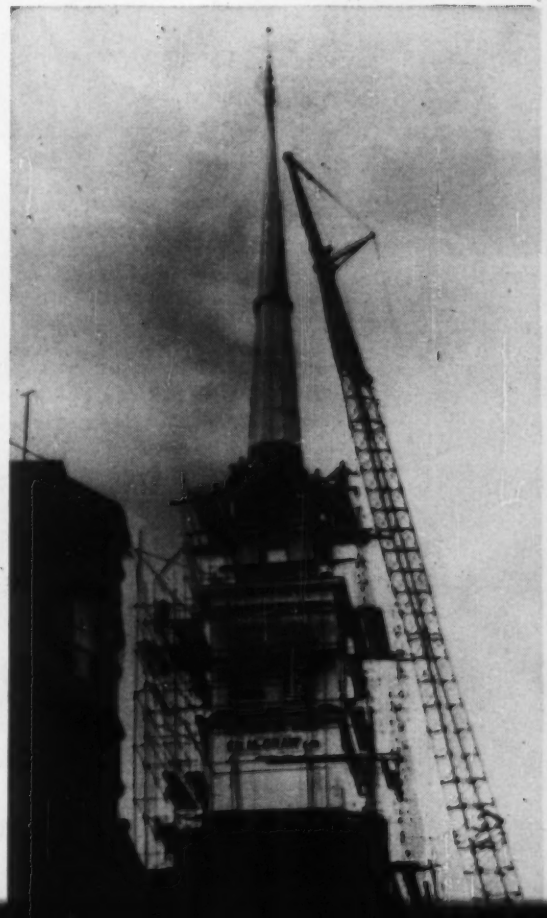
Setting of the spire marked the final stage in the restoration of the historic edifice, which has been carried out by F. H. McGraw & Co., Hartford construction firm. Ceremonies on Aug. 31—anniversary of Hurricane Carol—will mark completion of the work.

Three construction crews spent nearly an entire day jockeying the massive crane and the five-ton, all-metal spire into position for the tedious hoist. With weather vane (the original) attached, the spire measures 70 ft in length.

Once in place, the lead-coated, copper-shingled spire was bolted to a steel base plate, 124 ft above the street, that is anchored to a white oak tower. The spire had been prefabricated in the Groisser & Shlager Iron Works yard in nearby Sommerville, and trucked in one piece to the site.

The white oak tower, 46 ft in height and weighing 10 tons, was erected in May. Of mortise-and-tenon construction, it was also put in place in one piece. The trees were slabbed, adzed by hand, and assembled in Curry Lumber Co.'s Boston yard. Erected with two cranes, the tower is bolted to two steel beams set on the steeple's brick base, 78 ft above the street.

Shortly after the famed steeple, where the lanterns were hung to signal Paul Revere on his storied ride, had been toppled by Hurricane Carol, the McGraw firm offered to undertake the restoration as a public service, without fee. Charles Strickland, Boston architect, was commissioned to make reconstruction as faithful to the original as historical research would permit. Cleverdon, Varney & Pike, Boston engineers, designed the steeple for winds in excess of 125 mph. Most construction materials were donated.



TOPPED last week with 67-ft spire, including 600-lb weather vane, the restoration work is complete except for painting and woodwork finishing.

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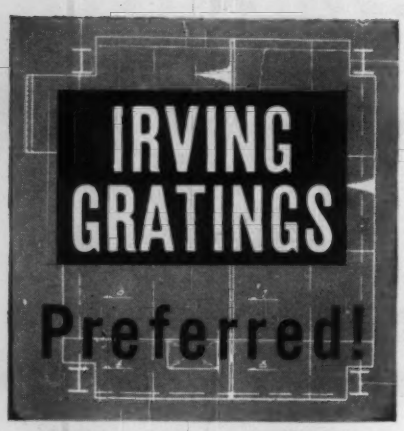

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$20-Million Office Center Planned by Coast Oil Firm

Construction will start within a month on a $20-million building project for Union Oil Company of California, including a height-limit home office building and three auxiliary office and service units at a five-acre site overlooking downtown Los Angeles.

Because of its location on a hill, the diamond-shaped 13-story home office building will be the highest structure in the city.

As designed by architects Pereira & Luckman, the four buildings will have a total of 1,000,000 sq ft of floor area, including a three-level underground parking garage for 1,500 cars. For future expansion, foundations will be put in for a second height-limit building connecting with the initial unit.

Clearing of the site is being completed now to permit the contractor, Del E. Webb Construction Co., to start work soon.

PUD Asks License to Build First Priest Rapids Dam

Grant County (Wash.) Public Utility District has applied for Federal Power Commission permission to build the first of two dams to develop the Priest Rapids site on the Columbia River.

The first dam, a $161-million project at Priest Rapids, would have an installed capacity of 620,000 kw. A second dam, the $180-million Wanapum project upstream, would have a capacity of 640,000 kw.

Original PUD plans for a single high dam at Priest Rapids were abandoned in favor of two dams after a series of surveys.

If FPC approves, construction will begin about June, 1956 on the Priest Rapids Dam, according to Glenn A. Smothers, PUD manager. Wanapum would be started in mid-1958. Each dam will take about four years to complete.

Priest Rapids has been authorized as a federal project, but Congress last year laid aside the federal authority for two years to give non-federal agencies an opportunity to build the dam.

Plan New Feasibility Study For Indiana Toll Road Route

The Indiana Toll Road Commission will seek funds for a final feasibility study of the proposed North-South Toll Road. Gov. George N. Craig concurred with the commission's request after a preliminary survey by three engineering firms indicated a route east of Indianapolis would be more feasible than the proposed route west of the city.

J. E. Greiner Co., of Baltimore, Md., made the civil engineering study. Wilbur Smith & Associates, New Haven, Conn., and Parsons, Brinckerhoff, Hall & Macdonald, New York, made the traffic and earnings studies.

State Sets Up Intern Plan For Young Road Engineers

Seeking means of filling the constant demand for trained engineering personnel, the Arizona State Highway Department this week was proceeding with a two-pronged training and recruitment program.

The first phase of the program involves summer employment of 90 engineering students, who have been assigned to survey parties, signal work, traffic engineering, estimating and design, and research sections. The students will remain in the department's employ for 60 days, at salaries of $275 a month.

Second phase is an engineer-in-training program for engineering graduates on their first jobs. The department has set aside $25,000 for the first year, during which five graduates will be enrolled in the program. Next year, 10 graduates will be put through the training, and the following year, 15.

These "interns" will be employed under two-year contracts, with starting salaries of $375 a month. During their "internship," they will work in every highway department division, and their capacities will be rated. Upon successful completion of the two-year course, they will be placed in permanent jobs.

Department spokesmen said that applications for "intern" status must be made immediately upon graduation, and candidates must be graduates of recognized engineering schools.

Western States Consider Tax Collection Compact

A multi-state compact covering reciprocal collection of motor vehicle fuel taxes—particularly from interstate truck carriers—may be an outcome of a recent meeting of state highway and taxation officials.

Sentiment at the session—the Western Interstate Committee on Highway Problems, held at Billings, Mont., —indicated strong support for further talks among state officials on the taxation matter. What the officials have in mind is legislation in each state that would set up similar tax structures for interstate carriers, and would provide for apportionment of taxes collected by individual states to neigh-

boring states, if the fuel was used partially in the adjoining state.

At other sessions of the two-day meeting, officials expressed themselves as strongly in favor of President Eisenhower's "grand plan" for roads, and pointed out that Congressional delay in passing new highway legislation is hurting state programs, by failure to set up definite standards and financing methods.

Chicago Receives Low Bids On Port Terminal Projects

Low bids totaling $19.4 million were submitted July 1 for first-stage construction of Chicago's Lake Calumet Harbor and Port Terminal. The work involves nine construction projects, largest of which are two 6,500,000-bu grain elevators. A low bid of $11.6 million for the elevators was submitted by James Stewart Corp.

Among the other low bids were: $2.8 million by A. L. Jackson Co., for transit sheds, offices, backup warehouses, and other buildings; $1.8 million by Great Lakes Dredge & Dock Co., for dredging and dock construction; $1.7 million by Krug Excavating Co., for grading and other site work.

Contracts will be awarded about July 15. Revenue bonds to finance the project will be sold following awarding of the contracts.

DeLeuw, Cather & Co., Chicago, are consultants on the project. Maxim M. Cohen is general manager-secretary of the Chicago Regional Port District.

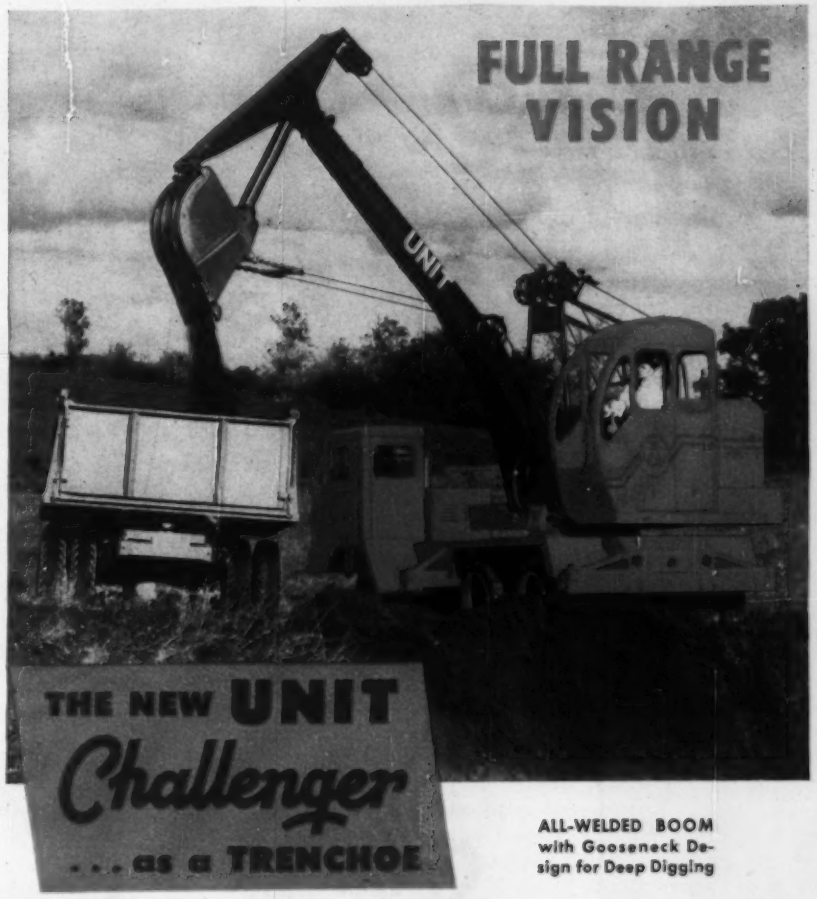
New Mexico Highways to Get Thicker Subsurface Ballast

In a move designed to cope with an expected heavy increase in truck traffic, the New Mexico State Highway Department is now calling for thicker ballasting of the subsurface under new highway construction.

L. D. Wilson, chief highway engineer, reported to local newsmen that the new specifications may increase construction costs by as much as $2,000 a mile, depending on physical characteristics of the area in which the new roads are built.

Urban Road Plan

A $15-million construction program in Charleston has been outlined by the South Carolina Highway Department. Immediate plans call for building a new 5-mi viaduct on King St., and 2 one-way streets from Ashley River bridge to Cooper River bridge. Future work would include construction of a second Ashley River bridge in about a year, and another Cooper River span in five years.



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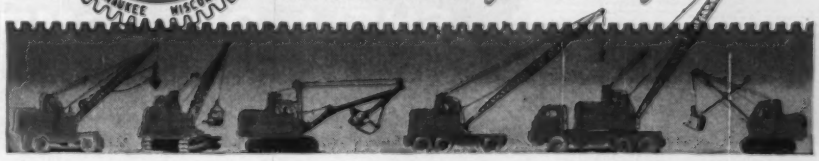

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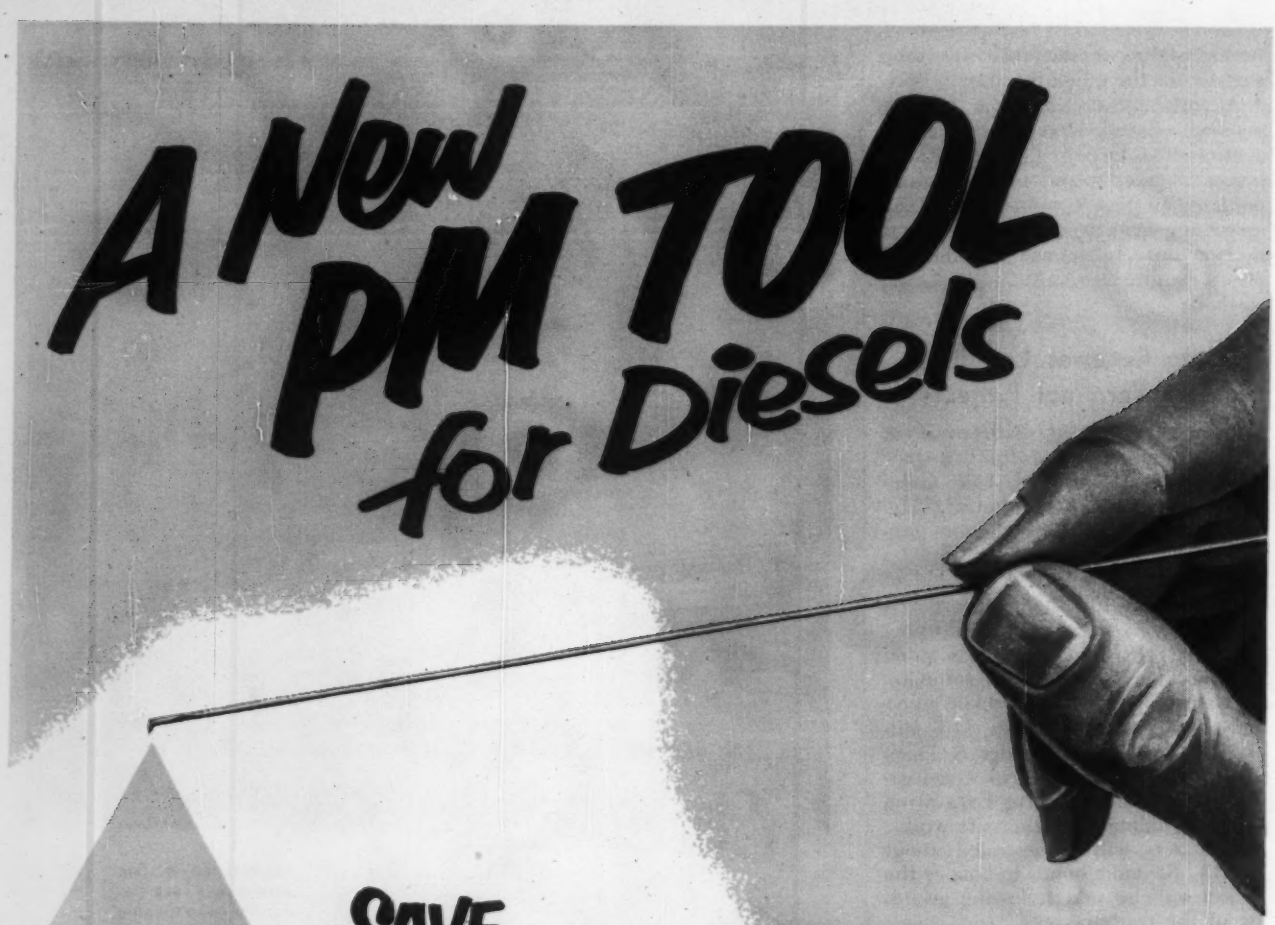

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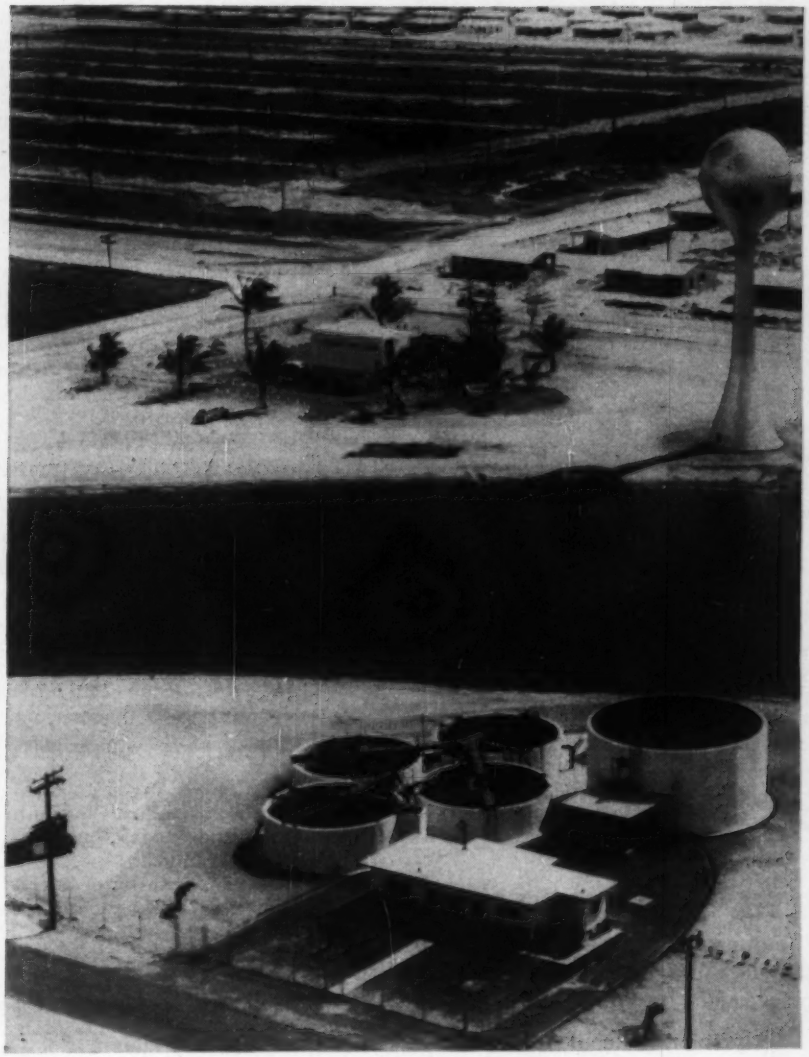

UTILITY PLANTS—sewage works and waterworks on opposite sides artificial lake—are built and operated by developers of Carol City in Florida, where they build . . .

Cities on Speculation

In Florida, they build cities on speculation. It's done elsewhere, too—everywhere real estate developers do commercial, utility and community structures along with houses.

There is a growing tendency across the country for home-builders to become city-builders. Levittown, Pa., is the biggest existing example, and announced plans for Sharpstown, Tex., indicate it will be even bigger.

But in Florida, especially around Miami, a taboo on individual household sewage disposal (high groundwater makes septic tanks inoperative) and a premium on water cause developers to go all out in building municipal facilities in order to sell houses.

A good example of just how far this idea might go was the original scheme of entrepreneurs building Carol City, a Miami suburb, and about the largest city-from-scratch proposed in the area.

It was the notion of the original financier-builder-promoter team building Carol City that they could sell 10,000 houses at cost and take their profit solely from the land they improved, the commercial centers to be built, and the utilities they would own and operate. It hasn't worked out quite this way; neither have original plans for private financing.

As Carol City has evolved, the houses are being sold with FHA and VA financing and at prices higher than cost. But the original intention to own and operate water and sewage works has been followed through with organization (by the builders) of Carol City Utilities, Inc., and with construction of the largest privately owned utilities of this type in Florida.

Carol City is going up on cow pastures 14 miles northwest of downtown Miami. Planned by Harland, Bartholomew & Associates, it is being built by Gaines Construction Co. of Miami. Julius Gaines is the builder in the original triumvirate behind the project; Ralph E. Stolkin of Chicago was the financier, and Carl Byoir of the New York public relations firm Carl Byoir & Associates was the promoter. (The original group of three has split, Byoir and Stolkin selling their interests.)

They planned a 40,000-population community with six shopping centers, sites for seven schools, a dozen churches, a community center and a 100-acre park with lake and golf course. To date they have completed about 500 houses; they have completed the necessary water and sewage works to serve 1,800 homes; and they have ordered equipment for plant extension sufficient to serve another 12,000.

• **Full-sale utilities**—Ultimately, water and sewage works will represent an investment of $4½ million at Carol City. FHA and VA mortgage-guarantors require that the cost of these facilities be paid off in the sale of the houses, so that the house purchaser will pay initially and but once his share of utility costs. It is also lawful for Carol City Utilities, Inc., to sell out at some future time only to a municipal entity which would not further assess the homeowners for their utilities.

This requirement that Carol City Utilities may sell only to a municipal entity is also a Dade County regulation backed by a trust agreement between the company and the county commission.

The county agreement has a two-pronged purpose. One, it is to keep the county or any municipal government that might be organized at Carol City from issuing tax bonds with which to buy out the utility company and levying against the real property in the subdivision to pay off the bonds.

The only way the county or a municipal government, under this trust agreement, could raise the money to buy out Carol City Utilities would be by the issuance of revenue bonds.

The trust agreement also provides that in case the utility company fails to maintain adequate service and the basic rate structure, the county can take over and put a trust officer in charge.

The county requirement gives home owners in Carol City added protection—beyond the FHA and VA regulation.

Operating charges have been set for Carol City; a sewage charge of

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$2.50 per month for a one-bathroom house, $3.00 for two bathrooms; water rates of $2.50 monthly for the first 6,000 gal, 40¢ per thousand on all water over 10,000 gal per month. These water rates are comparable to those of other communities in an area where high per capita usage generally makes for sizable family water budgets.

• **Package-type plants**—Clifford & Associates of Miami Springs designed the water and sewage works, which face one another across a small pond. Water treatment and sewage treatment both are handled in packaged-type plants expandable by simple addition of manufactured units.

Well water is de-gased, softened, chlorinated, and pumped to elevated storage at present in a 150,000-gal tank at the plant. Other elevated tanks will be built on the system.

Sewage works effluent will go to an artificial lake. There are to be drainage canals across the project site for groundwater control and runoff. William C. Tims superintends water supply and sewage disposal for the development in the already operating plants.

Carol City is exceptional in the fanfare it has been given and in its announced ultimate size, but there are other cities built on speculation in the Miami area worthy of note:

Miramar, a development in South Broward County, just over the Dade County line, is also projected as a 10,000-home community, and it, too, will have its own sewer system and waterworks.

Leisure City, a 5,000-home project in South Dade County near the Homestead Air Force Base, is a Florida Sun Deck Homes development with its private waterworks and sewer system. Myrtle Grove (3,500 homes) and Cutler Ridge (6,000 homes) are two more in Greater Miami which will be served by individual waterworks and sewer systems.

Such building of cities from scratch is not by any means limited to Florida. Long Island's Levitt outdid himself in building Levittown, Pa., an ultimately 16,000-home community with $22 million worth of water supply, sewerage, land development and recreational construction (ENR Dec. 4, 1952, p. 34).

And lately (ENR Mar. 24, p. 93) came the announcement that Texas (where everything is bigger) would have Sharpstown, a $400-million, 10-sq mi development of 25,000 homes on the outskirts of Houston. Frank Sharp will develop the land, provide utilities, build roads, schools, shops and community buildings. Other speculative builders will help supply the houses, and a city will take shape.

THE THIRD CREEK PLANT, at Knoxville, is rapidly approaching completion, the final structure being the main control building (structural steel frame in foreground).

PRACTICALLY UNDER Nashville city hall—and 120 ft down—tunneler grouts joints in 72-in. R. C. pipe tunnel lining.

Three Cities Lead the Way—

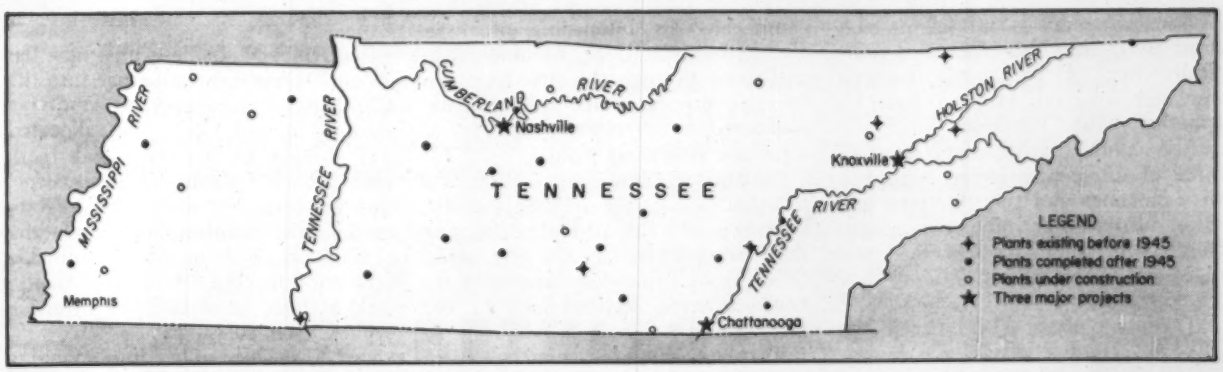
Cleanup of Tennessee Rivers

With three of its major cities leading the way with programs that will treat 30% of the state's pollution load, Tennessee has spurred its municipalities into the most active sewer and treatment plant construction program in the state's history.

Prior to the end of World War II, only six treatment plants operated in the state. But within the past ten years Tennessee has taken some long strides in abolishing pollution from its major and minor streams. Greatest effects of the program will be shown in the improved quality of the waters of the Tennessee and Cumberland Rivers.

• Projects large—projects small—Eighteen smaller Tennessee communities have treatment facilities under construction, ranging in cost from $80,000 to $679,000. Some 14 other towns have plans under study for launching similar improvements, and hardly a week goes by that a city or industry does not consult state officials concerning information about anti-pollution problems or plans. At present only 39 of the 146 sewerage systems—118 municipal, 11 state and 17 others—including private institutions, meet state approval, but S. L. Jones, chief engineer of the state pollution control board, estimates that this number will be substantially increased within a year, when completions on going projects start being recorded.

The three largest programs are being carried on in Knoxville, Chattanooga and Nashville, all three of which are on the list of 17 areas designated as critical in 1952 by a state pollution study commission. Only two of the listed areas have completed their programs—Bristol and Lupton City—so the big three are not far behind in



SEWER WORKS CONSTRUCTION invades every area, with three major programs eliminating 30% of state pollution load.

. . . River use prime design factor

falling into line with their more complex projects.

• **The sensible approach**—Two factors have led to excellent cooperation by Tennessee cities in the pollution abatement program. Playing one role, Jones said, is police power, which puts a big stick at the disposal of state officials; a stick—not wielded as yet—that will be used if the situation warrants. The influence of this power was felt in 1949, when it was suspended with a resulting set-back in the control commission's operations. Since the return of authority in 1951, the clean-up program has progressed satisfactorily in spite of the commission's reluctance to use force.

The second factor is close coordination between municipalities, industries, Jones' office and that of Julian R. Fleming, director of the state's division of sanitary engineering, Department of Public Health. The two agencies have found that cities respond rapidly to proposed improvements when they realize that each city's problem is being treated individually.

Tennessee requirements are dictated by characteristics of the stream and of individual plant effluents at the point of discharge.

• **Knoxville**—Slightly behind schedule, but approaching completion, is the $1.8-million Third Creek Treatment Plant, Knoxville's main bulwark against river pollution.

Already completed under the program designed by Greeley and Hansen of Chicago, is the system of interceptors that eliminates 32 raw-sewage outfalls into the Tennessee River, and the small Love's Creek Treatment plant that serves 7,600 in habitants of a residential area north of the city proper.

The Love's Creek plant, in operation for less than a year,offers primary treatment consisting of detritus tank, grit chamber and Imhoff tanks, with sand beds for sludge drying. Prechlorination removes only about one-third BOD, but the effluent is practically free of pathogenic bacteria discharge into the Holston River, a tributary of the Tennessee.

Also completed are more than 13 miles of interceptor sewers with two river crossings and two pumping stations. Interceptor pipe sizes range from 21-in. to 72-in. diameters, and plant intake and outfall lines are each 84-in. diam.

The main plant (Third Creek), located two-thirds of the way down the Tennessee River between the east and west city lines, also was designed by Greeley and Hansen. Designed for 261,000 population—Knoxville now has 160,000—those portions of the plant that are inflexible will treat an average flow of 50 mgd with an 86 mgd maximum. Those parts that are readily expandable are designed for 36 and 58 mgd respectively, with area allocated for future expansion when necessary.

The Third Creek Plant will provide preliminary treatment and chlorination, with buildings arranged so that chemical precipitation facilities may be added later as necessary, according to Walter Smith, resident engineer at the construction site. The main building at Third Creek will contain bar-screens, grinders, wet-well pumping equipment, sludge filtering equipment, offices, laboratory and personnel service space.

Originally, plans for this building called for additional lab and auditorium facilities for use by the University of Tennessee, which adjoins the plant site, and for rent to the Tennessee Valley Authority. But the additional facilities were dropped when negotiations with the TVA failed.

The balance of the layout includes a chlorination building with means for pre-and post-chlorination; a two-unit grit chamber; four settling tanks with raw-sludge pumps and Parshall flume for measurement; three sludge digestion tanks with a sludge control building and elutriation facilities for preparation of sludge.

In order to promote uniform gas production despite intermittent operation of sludge collectors, a sludge well has been provided with reciprocating pumps that will pump at a continuous rate to digesters. Two of the digestion tanks have fixed covers, but the third has a floating cover that will enable addition or withdrawal of sludge at controlled rates thus increasing flexibility of the plant.

• **Chattanooga**—The problem of collection of Chattanooga's sewage was complicated by a transmission obstacle. Missionary Ridge, running north and south through the city, forms an effective barrier against economic installation of interceptors that would serve one treatment plant.

Fortunately, however, the existing Chattanooga sewage treatment plant, known as the Brainard plant, serving the eastern portion of the city, could be enlarged to provide treatment for newly sewered sections east of the ridge.

The new west-slope interceptors installed on both sides of the Tennessee River could transmit sewage and industrial waste by gravity and pumping stations to a favorable site—west of the river—in the neck of a modified oxbow formed by Moccasin Bend of the Tennessee.

This was the site decided upon for construction of the Moccasin Bend treatment plant with an integrated pumping station. As designed, the plant will occupy a 94-acre tract, providing mechanically cleaned trash racks, two 64-mgd grit chambers, four primary settling tanks with space for four additional units, six 25-ft-dia digestion tanks with space for two additional tanks as primary tanks are added and provision for future construction of chlorination equipment.

All conduits are designed for an average flow of 2 fps (1.5 fps at minimum flow). The plant will be protected against floods to an elevation of 660 ft. Mean water level in the river is 634, and maximum recorded flood level was 680 ft. This, however, was before river control by Tennessee Valley Authority, and maximum flood now is not expected to pass the 660-ft level. With protection set at 660 ft, the plant would go out of operation at a 657-ft level of flood.

The Moccasin Bend plant will serve a maximum population of 155,000, and the Brainerd plant, now serving 7,700 persons, will be enlarged in two stages, the first to accommodate an additional 25,000. The latter plant ultimately will serve 66,000 under projected plans, with an average flow of 6.6 mgd.

Cost of the entire program including construction, land acquisition, engineering, legal and financing will be an estimated $10.4 million, according to Havens & Emerson of Cleveland, consulting engineers handling the program. Moccasin Bend plant, with its pumping station, will cost $2.4 million, and the Brainerd supplementary program will cost slightly over $1 million.

Completion of the project is slated for late 1957, with interceptors more than two-thirds completed, and two river crossings scheduled for completion this year.

• **Nashville**—Nashville, which now has 25 outlets pouring raw sewage into the Cumberland River and one emptying into Richmond Creek, has allocated $11 million for sewerage and treatment. Ready for contract, in construction or completed under the program are 14 miles of interceptors, including a 12,800-ft, 72-in. hard-rock tunnel—now one-half completed—more than a mile of force main and two inverted-syphon river corssings.

In East Nashville, lines ranging from 15-in. to 48-in. diameter already

This 72-in. shop-strutted Beth-Cu-Loy culvert was recently installed for the city of Vancouver, Wash. *Fabricator:* Beall Pipe and Tank Corporation, Portland, Ore.

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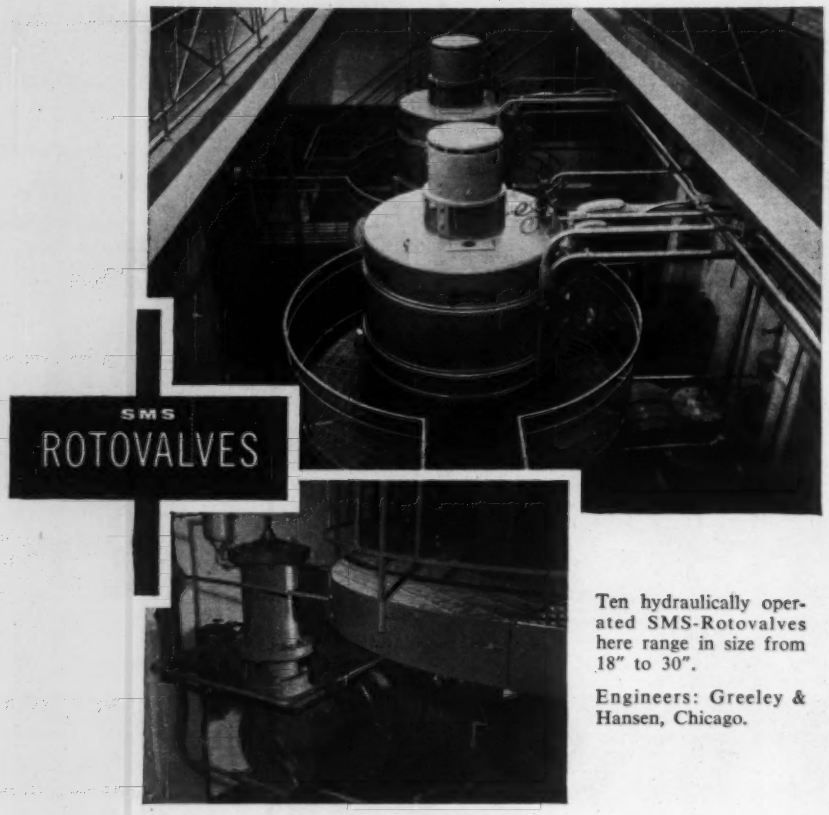

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Engineers: Greeley & Hansen, Chicago.

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are installed, and a 48-in. to 66-in. interceptor that will feed the tunnel are completed. Under construction is a 54-in. to 60-in. line leading from southwestern Nashville to a pumping station that will pump sewage via force main a mile to the treatment plant.

Type and degree of treatment has not been set for Nashville, according to Warren A. Coolidge, the city's public works administrator, but as plans stand, intermediate treatment will be provided, with incineration of dried raw sludge at the plant site.

• **Big three treatment pays off**—It is estimated that 30% of the pollution of the Tennessee and Cumberland Rivers is the result of the raw domestic and industrial waste discharged through outfalls within the city limits of Knoxville, Chattanooga and Nashville. State officials are looking forward to a vast improvement in the quality of the streams as a result of these three programs alone.

Memphis has the advantage of its position on the mighty Mississippi which shows no pollution because of its diluting volume, but the city has not escaped completely from pressure of the clean-up program. Several of the outfalls in the heavily industrialized section along Wolf River have resulted in a septic condition of that stream. While no definite plans have been formulated, an interceptor that will pick up outfall lines, transmitting contents to the Mississippi will be instigated under a future program.

• **Here's the box score**—Construction of sewerage (with treatment) facilities in Tennessee:

• In existence before 1945: Dayton, Harrogate, Jefferson City, Norris, Pickwick Dam and Tullahoma.

• Put into operation between 1945 and 1954: Bristol, Cleveland, Cookeville, Dickson, Lewisburg, Lupton City, Manchester, Mount Pleasant, Old Hickory, Paris, Sewanee, Smyrna (housing project), Watts Bar Dam and Waynesboro.

• Put into operation within the last six months: Dyersburg, McMinnville, Millington, Franklin, Knoxville (Love's Creek Plant).

• Under construction, other than those discussed: Gatlinburg ($679,000), Gallatin ($320,000), Franklin ($300,000), Union City ($320,000), South Pittsburg ($300,000), Millington ($300,000), Madison College ($80,000), Alama ($220,000), Arlington ($106,000), Bell Buckle ($100,000), Gleason ($230,000) Jamestown ($250,000), Sevierville ($500,000) and Clinton ($200,000).

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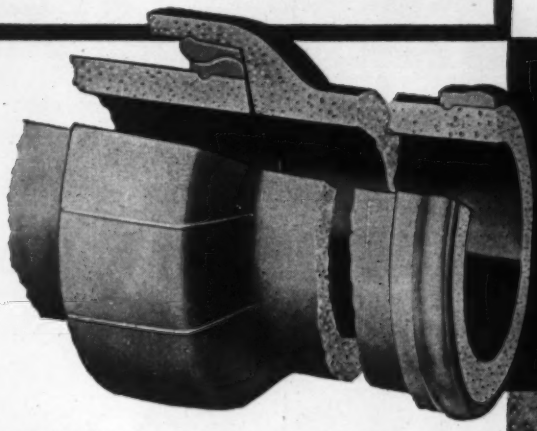

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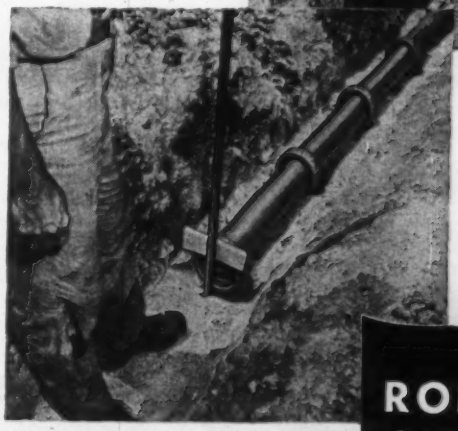

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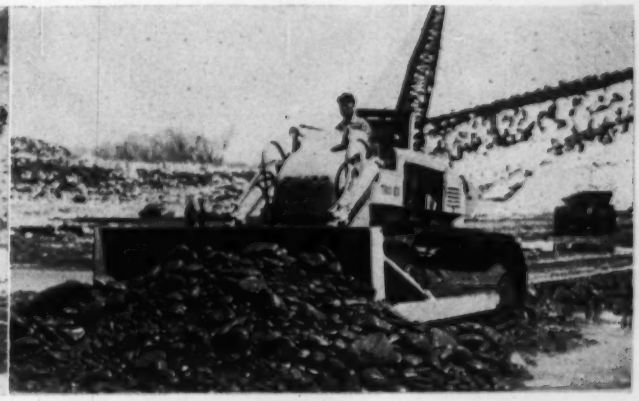
Independently controlled tracks make the Eimco Tractor ideal for spreading. The operator can move more material with less maneuvering.

Loading trucks on a river diversion job in the French Camaroons. Dependability of equipment is important in remote areas. Eimcos have been selected where the going is tough.



Convenient, easy controls make the Eimco the easiest tractor to operate. There are no clutch pedals on the Eimco. It can be shifted up or down, forward or reverse at full speed.

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Loading into 21 yard wagons on highway cleanup job. The 105 can do these jobs without blocking traffic.

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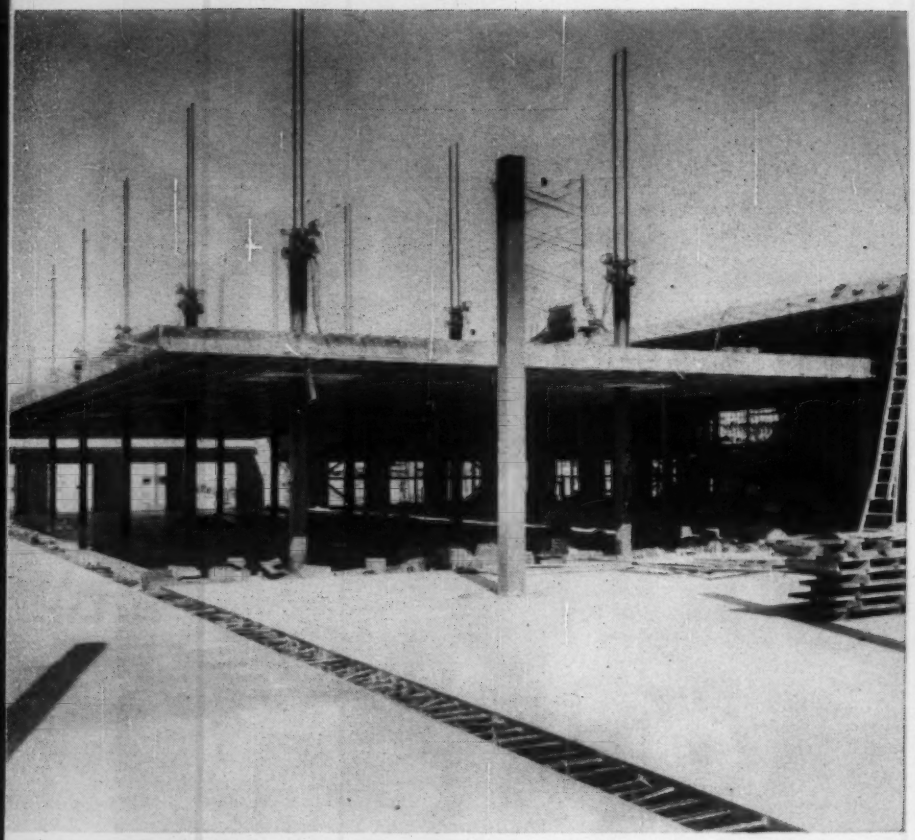


SLAB LIFTING with jacks atop columns for two buildings in Los Angeles was accomplished at lower-than-usual cost in conjunction with new-type forms and columns.

FORMS FOR WAFFLE SLAB for warehouse in Los Angeles are cardboard boxes.

Two Ways to Save on Lift-Slab

1. Use paper forms for slabs
2. Use square steel columns

Two Los Angeles lift-slab jobs now underway incorporate new features that make the slab-lifting technique more attractive from both design and cost standpoints. Corrugated paper boxes of heavy water-resistant material serve as forms for the waffle-shaped reinforced concrete slabs. And the design makes use of hollow square columns rolled to shape from standard 12-in.-dia pipe.

The projects are a 336,000-sq ft warehouse for the Brea Corp. to be occupied by Thrifty Drug Co. and a 269,000-sq ft garage for the Tishman Corp. adjoining its Wilshire Blvd. buildings (ENR April 26, 1951, p. 39). Both buildings were designed by Albert C. Martin and Associates, architects and engineers of Los Angeles. According to the designers, total cost of the warehouse structure is $3.60 per sq ft, while total cost of the garage is $2.50 per sq ft.

Second floor of the two-story Thrifty warehouse—designed for 200 psf—was placed by the lift-slab method. To handle the 160,000-sq ft floor, the slab was constructed in 22 sections, each to be lifted by jacks atop 12 columns spaced on 24-ft centers. The warehouse roof is structural steel construction, with gypsum slabs. Also figured in the square foot cost are two 10-ton elevators and a materials-handling conveyor.

The 967-car Tishman Garage is built on three levels, requiring lifting of second and third floor slabs. The building has no roof. And because it is partly underground to fit the slope of the area, lower levels are ventilated and sprinklered.

• **Waffle slabs**—Most significant development on these jobs, to which designers and contractors attribute much of the cost saving, is the cardboard-box form system for the waffle slabs. The forms are corrugated fiberboard boxes with the surface waxed for additional waterproofing. Giving added strength to the boxes are interior honeycomb partitions.

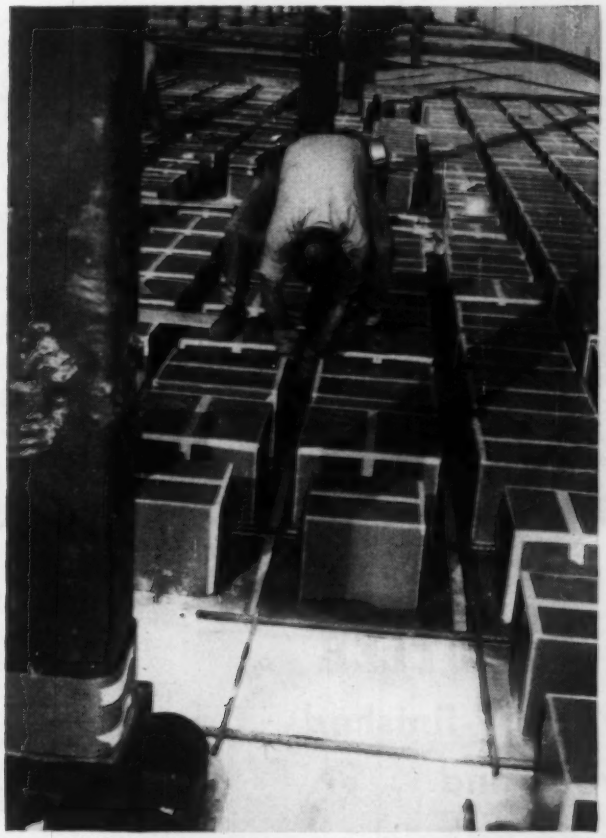
Boxes are delivered to the job flat and are assembled with waterproof masking tape. Placed on plywood decking, box flanges, 2½ in. wide, mate with those of adjacent boxes and are taped together to form 5-in. wide joists for the waffle slabs. With the boxes thus taped together, the assembly is rigid enough to stay in position during placement of reinforcing and concrete pouring. The boxes with the added strength of the interior partitions are strong enough to support the weight of workmen and light equipment. Concrete placing, however, is being done with a bucket suspended from a crane boom rather than by concrete buggies.

The assembled boxes hold their shape well during placing of concrete. There were, however, occasional ruptures. When these occurred, extra concrete was forced into the joists, causing a non-uniformity in appearance of the underside of the slab. But such form failures are reported to be unusual if normal care is taken.

In one case, the forms were wet by rain after being positioned and before concrete was poured. This weakened the wax-coat waterproofing enough to cause many more form ruptures than normal. Integrity of the slab involved was not threatened. But the experience indicates that rain protection may be needed.

On the Thrifty Drug warehouse job, voids created by the boxes are 18¾ by 19 in. Joist depth is 15 in. On

Columns are square, having been rolled to shape from steel pipe. The slab will be only 3½ in. thick, the joists, 15 in. deep.



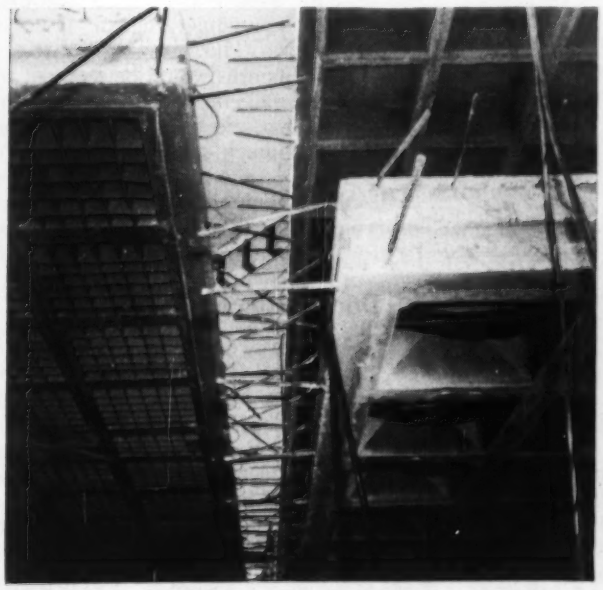
WORKMAN TIES REINFORCING in joists formed between cardboard boxes. At columns, slab is thick to take shear.

the Tishman garage job, the boxes were 30 in. square, since floor loading is considerably less for the garage than for the warehouse.

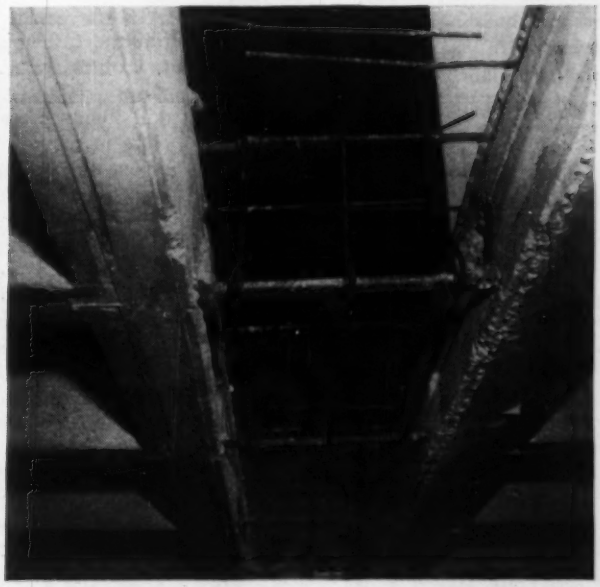
Boxes are made to specified dimensions—requiring about two weeks time. Cost of the boxes is about 12¢ per sq ft, varying, of course, with joist depth. On the first jobs, the interior partitions were not reused. But experience has indicated that a substantial percentage of such partitions can be used over again, which would reduce cost.

On lifting the slabs, many of the cardboard forms drop out. And stripping the rest is an easy matter.

From a design standpoint, advantage of the waffle shape is that a stronger and lighter slab can be obtained—thickness of the warehouse slab is 3½ in. Weight saving, of course,



UNDERSIDE OF SLAB before form stripping at left shows honeycombed interior of paper box forms.



BARS ARE LAPPED at the same effective depth in the joint between adjacent slabs. Stirrups give added strength.

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results in a direct saving in materials cost. And lighter slab weight increases the area that can be raised in one lift. So there is a definite inter-relation of design and construction factors tending to reduce costs.

Development of the cardboard box forms was a joint effort of the designers, contractors and box manufacturers. Those involved include Edward J. Martin of Albert C. Martin and Associates, designers of the buildings, and C. C. Simpson, Jr., of the William Simpson Construction Co., builder of the warehouse. They worked closely with officials of the Container Corporation of America. In the development process, the Simpson firm made several test pours in its Los Angeles yard.

• **Square rolled columns**—Another new feature of the two jobs is use of square columns—a recent development of Kaiser Steel Corp. At present only 10½-in. columns are available. They are rolled into the square shape from 12-in.-dia pipe, with the welded seam positioned in the middle of one of the sides. Wall thicknesses ranging from ¼ to ½ in. can be had.

A primary reason for using the square columns is that available equipment for the lift-slab operations will fit 10½-in.-square columns. Pipe columns of equivalent strength would have to be 12-in.-dia which will not fit between the two lifting screws of the jacking mechanism. Use of smaller columns, such as 10-in.-dia pipe, would require closer spacing and thus smaller slabs for lifting purposes. Furthermore, the square columns have the same section modulus in both directions, which makes them more advantageous than most wide flange or H-columns in this size range.

In the garage, the square columns run the full height as a single piece. In contrast, the square columns for the warehouse extend only to the second floor. They are filled with concrete in which anchor bolts and base plates for second-story columns are embedded at the top. These second-story columns are 8-in. wide-flange members spaced 24 ft in one direction and 48 ft in the other.

Lifting operations at both buildings followed normal lift-slab procedures. Due to the large areas involved and the uniform column arrangement, the lift for the garage proved to be extremely economical; it cost about 18¢ per sq ft.

Walls of the warehouse are of precast concrete. First and second floor walls were cast and erected separately.

On both projects, structural analysis was performed with a model to determine steel requirements. The designers credit a saving in reinforcing steel to greater accuracy of stress distribution resulting from the model analysis.

Design of reinforcing splices between adjacent slabs was given special attention. The splices occur at the point of maximum moment under uniform load. The ACI code advises that continuity splices where concrete is in tension should be avoided except where necessary. But it gives no rules for making such splices where they are necessary—as is the case in lift-slabs designed as continuous diaphragms.

On these jobs, the bars were lapped with bars from adjacent slabs and wired together at the same effective depth. They were not permitted to have a vertical offset. And stirrups were added to resist stresses in the concrete due to wedging action of the deformations on the bars.

Design of the two buildings was accomplished by Albert C. Martin and Associates, architects and engineers of Los Angeles. Contractor on the Thrifty warehouse was The William Simpson Construction Co. Contractor on the Tishman garage was C. L. Peck. Lifting subcontractor for both buildings was Vagtborg Lift-Slab Corp. of Los Angeles.

Consultants Study Causes Of Odors at Sewage Plant

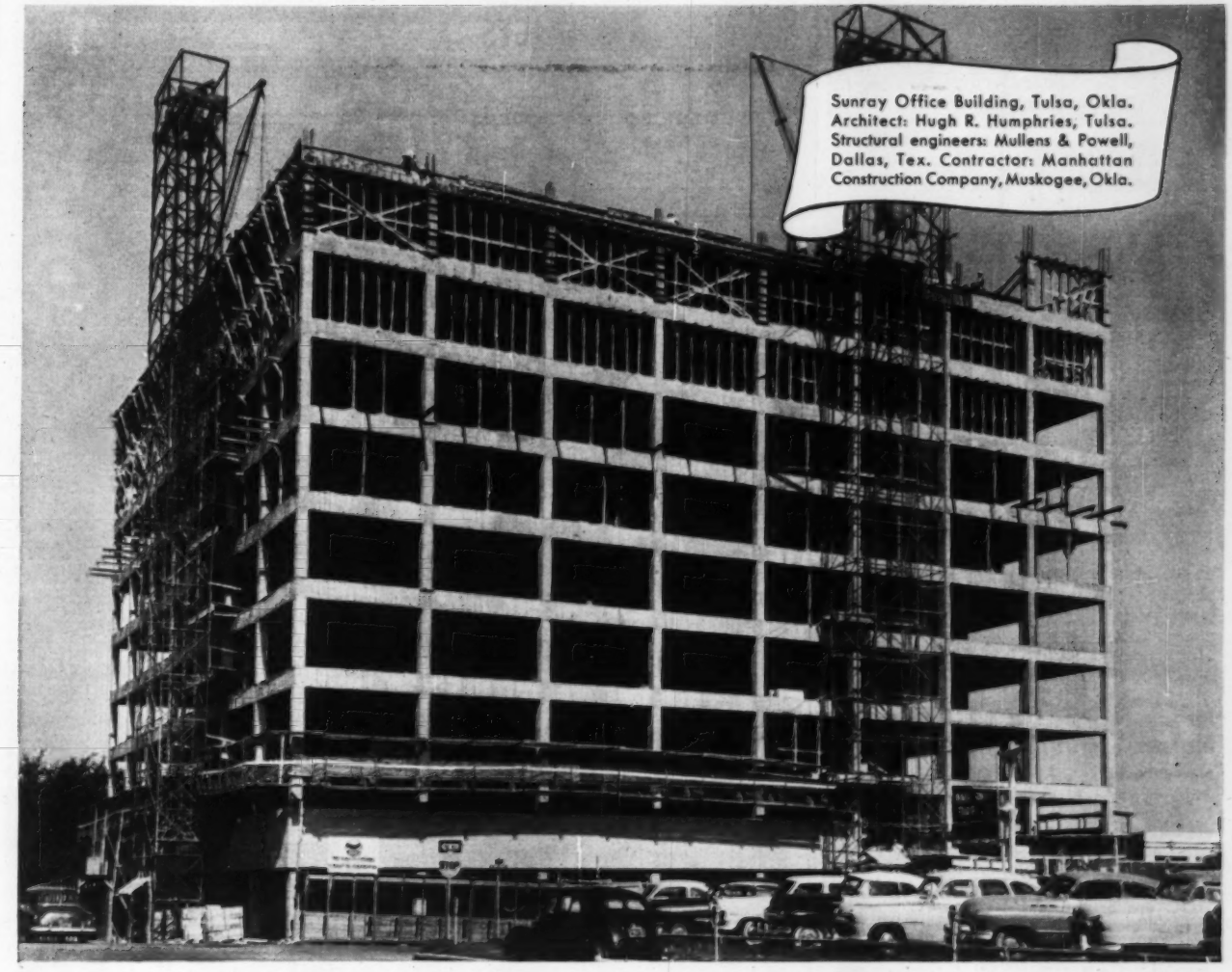
The Kenton-Campbell Sanitation District in Kentucky has retained Greeley & Hansen, Chicago consulting engineers, to study the causes of odors at its $8-million sewage treatment plant. Unpleasant odors from the plant resulted in a court order to shut it down until the situation was corrected (ENR June 16, p. 22).

The district's engineers said preliminary work embracing a comprehensive sampling program now is under way. They estimated that six to eight months would be required to complete all of the work contemplated, but said the plant might be reopened much sooner.

W. C. Anderson, general manager of the district, said closing of the plant would have little effect on the district's operation.

Dam Project

Montana Power Co. has applied to the Federal Power Commission for a license to build a 60,000 kw hydroelectric plant on the Missouri River near Great Falls, Mont. To be known as the Cochrane development, the dam would be a concrete, gravity-type structure, 103 ft high and 820 ft long. It would provide a storage capacity of 2,700 acre ft of water, and two 30,000 kw generating units would be installed in the power house.


Sunray Office Building, Tulsa, Okla.
Architect: Hugh R. Humphries, Tulsa.
Structural engineers: Mullens & Powell,
Dallas, Tex. Contractor: Manhattan
Construction Company, Muskogee, Okla.

Concrete Frames and Floors

. . . MONEY-SAVING CONSTRUCTION FOR MODERN OFFICE BUILDINGS

The Sunray Oil Company chose reinforced concrete frames and floors for its Sunray Office Building in Tulsa, Okla. The building is 12 stories high, 140 ft. by 150 ft. in plan and is built with pan joist floors.

New commercial structures like the Sunray Office Building can be built faster and with greater economy when designed with concrete frames and floors. These are two reasons why more and more modern buildings are being built with this type of framing.

Reinforced concrete frame and floor construction offers architects, engineers, contractors and owners many advantages. For example, frame and floor construction proceed simultaneously. Walls can be finished as the building goes up. Facilities for heating and ventilating, as well as plumbing and wiring can be installed as the structural work progresses. This saves time and money.

Competitive bids and cost analyses show that savings up to 40% on frame and floor costs are possible with concrete. Concrete is sturdy and firesafe, gives years of service with little upkeep. This ***low annual cost*** is a bonus for owners, investors and tenants.

For help in designing reinforced concrete frames and floors for structures of any size or for any purpose—for apartments, schools, hospitals or commercial buildings—write for free illustrated literature. Distribution is limited to the United States and Canada.

PORTLAND CEMENT ASSOCIATION
DEPT. A7b-17, 33 WEST GRAND AVENUE, CHICAGO 10, ILLINOIS

A national organization to improve and extend the uses of portland cement and concrete . . . through scientific research and engineering field work

BUILD
BRIGHT COLORS
RIGHT INTO
CONCRETE
FLOORS...

And get greater hardness at low cost . . . easily!

TRUSCON
ART-ROC
AGGREGATE

Ready to use . . .
No pre-mixing with cement

Not a paint . . . ART-ROC troweled into the cement surface holds attractive colors safe from attack by cleansers, alkalis or rust. Provides a tough extra-hard surface at no extra cost . . . both for interior and exterior installations. Floors or pavements with ART-ROC are bright and attractive . . . easy to clean, economical to keep up.

Colors . . . Hardens . . . Beautifies . . . Dustproofs!

Just sprinkle on the leveled and floated fresh concrete surface, then work into the surface with a wood float and finish with a steel trowel. You'll be amazed at the brilliance and depth of the two beautiful colors: Tile Red and Spanish Green.

Remember . . . ART-ROC is not just a surface film, but color that's built-in to stay . . . and it's so easy to use!

- Terraces
- Porches
- Walks
- Tennis Courts
- Salesrooms
- Recreation Rooms
- Restaurants
- Factories
- Swimming Pools
- Driveways
- Laundries
- Garages

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Laboratories
Division of Devoe & Raynolds Co., Inc.

Resists the Penetration of Water

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Truscon Laboratories, Dept. E-8
Box 69, Milwaukee Junction P.O.
Detroit 11, Mich.

Please send me detailed information about ART-ROC.

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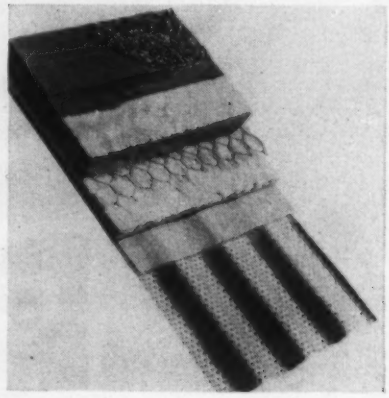
NEW PRODUCTS

Acoustical Roof System Is Fireproof, Only 5-in. Deep



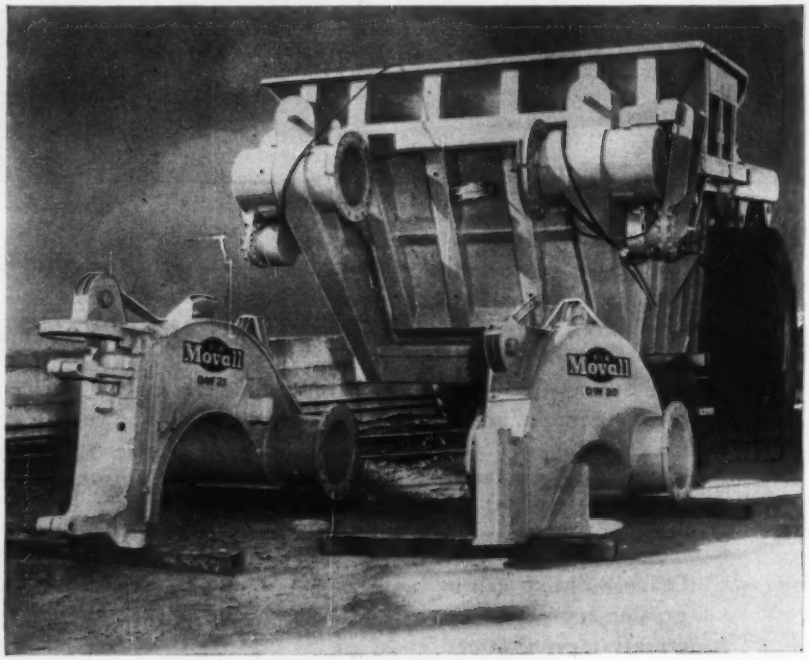
A new type of roof system reportedly furnishes a low cost roof deck with acoustic under side. The entire depth—from ceiling underside to roof top—is normally less than 5 in.

The key part of the roof system is a galvanized, corrugated steel sheet which has been perforated with a grid of holes $\frac{3}{16}$ in. in dia, spaced about $\frac{1}{2}$ in. o.c. Serving two purposes in the system, it acts as the structural deck and supplies a hard, durable underside for the acoustical ceiling which can be cleaned or painted.

On the bottom side, resting on the overhead beams of the building, is this galvanized corrugated steel sheet. On top there is placed a phenolic mat, and above that goes a 1-in. thick glass fiber insulation batt. The glass fiber is the acoustic or sound absorbing material, and the phenolic mat keeps the glass fiber particles from dropping out through the holes in the sheets. Above the batt is poured a lightweight insulating concrete, generally about $2\frac{1}{2}$ in. thick, with a light wire mesh embedded in the concrete. Above the concrete is the "built-up roof" composed of layers of tar and gravel.

The entire assembly weighs less than 8 psf yet is said to carry over 130 psf on $6\frac{1}{2}$-ft spans at ultimate strength.

Tests performed by the company

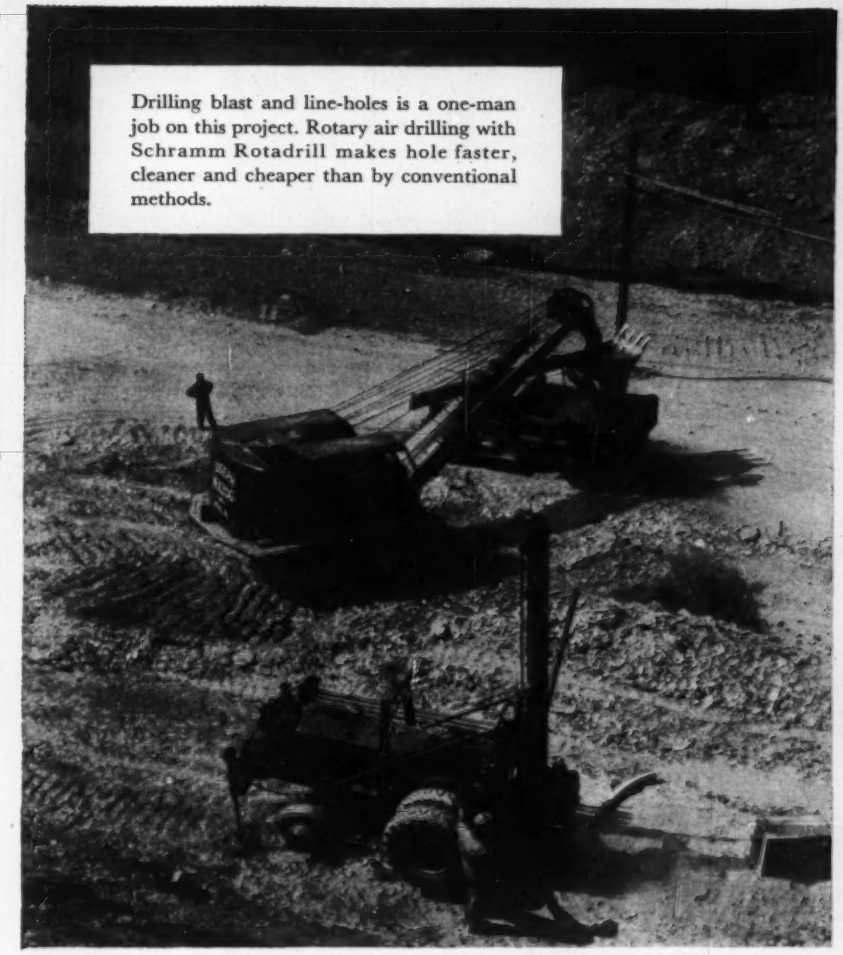


Yoke Sections Permit Fast Changes

Interchangeable yoke sections to fit Caterpillar DW20 and DW21, and similar prime movers are a new feature of C & D Movall power ejection and dump wagons.

According to the manufacturer, changeover from scrapers to Movalls or vice versa can be made by two mechanics in 4 to 8 hours in the field. Movalls use the same front end arrangement as the scraper; no modifications or extra assemblies are required.

The same basic Movall can be used interchangeably with either the Caterpillar DW20 or DW21, or any prime mover with sufficient horse-power and double-drum cable control, merely by installing the proper gooseneck. Price of each yoke section is $1,810 fob Benicia, Calif. C & D Co., Perkins, Calif.



Drilling blast and line-holes is a one-man job on this project. Rotary air drilling with Schramm Rotadrill makes hole faster, cleaner and cheaper than by conventional methods.

SELF-PROPELLED. The new Schramm Rotadrill is mounted on the Schramm Heavy Pneumatractor. Special weight boxes, dual wheels and the use of calcium chloride in rear tires add necessary weight to provide 10,000 lbs. down pressure. Schramm Rotadrill is also available truck mounted.

CONVENIENT, SIMPLE CONTROLS. Drilling controls are mounted in one bank, with pressure regulator and hydraulic gauge for controlling down-feed. Separate valves control each outrigger, forward and reverse rotations motor, slow downfeed, rapid downfeed and breakout cylinder.

ADDING PIPE. Fast vertical action of rotative head serves as pipe hoist for adding pipe or pulling drill string. Output spindle is flanged to take various drill pipe adaptors.

LARGE EASTERN CONTRACTOR SHATTERS RECORDS:

New cost and time records set for construction excavation

With the development of the new Schramm Rotadrill, rock drillers everywhere gain all the advantages of rotary rock drilling with compressed air. This comparatively new technique, originally developed in the oil fields, has been setting drilling records in almost every installation. It is believed that rotary rock drilling, with its advantages of clean, fast holes, fast set-up, and longer bit life, will completely replace the use of wagon drills.

Schramm's new Rotadrill on Pneumatractor is a complete, self-contained unit, self-propelled and self-powered. The unit can drill a 4¼" hole, or smaller, to a depth of 500 feet with 10,000 pounds down pressure. Normal compressed air drilling pressures of 20-30 psi can be instantly increased for dewatering or breaking out blockages. Drilling controls are mounted in one complete bank, conveniently located for one-man operation. Standard Rotative Head has 75 RPM output and can be throttled down to complete stall while maintaining constant torque. Heavy welded structural steel mast, lowered for traveling between jobs, can be operated at various angles for sloping holes.

If you use wagon drills, you will find it worth while to investigate the Schramm Rotadrill on Pneumatractor. Send today for Bulletin PR-55. There is no obligation.

Your local Schramm Dealer is listed in the Yellow Pages of your telephone directory.

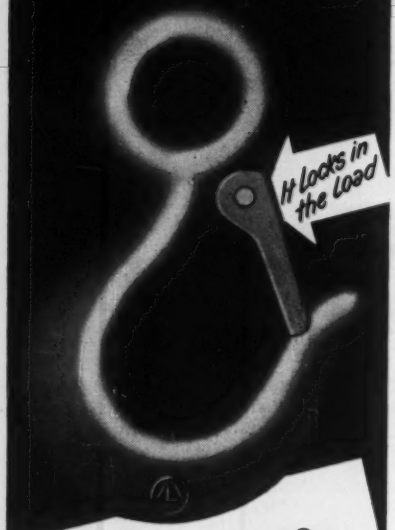
Schramm, Inc.

MANUFACTURERS OF AIR COMPRESSORS

620 North Garfield Avenue

West Chester, Pa.

The SAFEST HOOK You Can Buy!



Laughlin
SAFETY HOOK
DROP FORGED — HEAT TREATED
½ ton to 15 ton capacity

To help you order from your local distributor send for complete catalog.

THE THOMAS LAUGHLIN DIVISION
American Hoist and Derrick Co.
DEPT. 12G, Portland, Maine

Please send me catalog of your complete wire rope and chain fitting line.

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City.....Zone....State.....

indicate that the roof deck system with a 2½-in. insulating concrete slab provides a noise reduction coefficient of .65 and a U factor of .14.

Without a vapor barrier, this construction can be used in the central and southern U. S. where low to medium humidity exists in wintertime. With one layer of roofing felt as a vapor barrier over the slab and additional rigid insulation, it can be used in colder climates. GRANCO STEEL PRODUCTS CO., 6506 N. BROADWAY, ST. LOUIS 15, MO.

Chlorinator Redesigned for Easier Flow Rate Adjustment

A redesigned chlorinator integrates all chlorine flow regulating mechanisms into one unit. It is also said to provide for quick adaptability to an extremely wide range of flow rates.

In the new model, the diaphragms —a differential-pressure regulator and a vacuum regulator—have been combined into one unit or stack. The stack also contains a vacuum-breaker valve plug and a pressure relief valve. On preceding models, the pressure regulator, vacuum regulator, and vacuum breaker pressure relief assembly were three separate components connected by piping.

Integration of the regulators into one unit greatly reduces the interior piping needed, permitting a more compact, lighter mechanism. The design entails lowered maintenance since fewer parts are subject to abuse.

To change the capacity range for a new chlorine rate the metering tube and, in some cases, the rate valve and ejector assembly, are replaced with units of the desired capacity. According to the manufacturer, in the new design, the chlorine meter and chlorine rate valve can be removed from the front of the cabinet in three min-

(*Continued on page 50*)

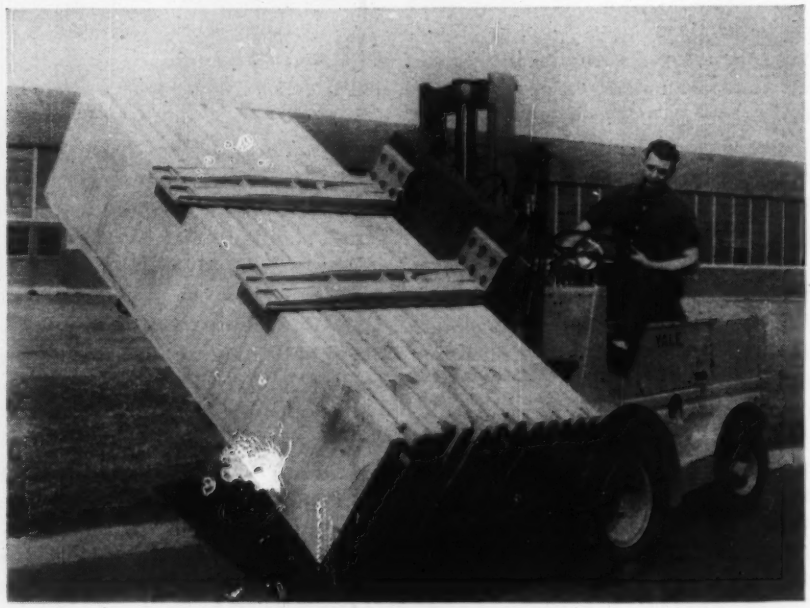
Roof Tile Handling Made Safe, Easy

Concrete roof tile handling can now be accomplished through the use of a full-circle rotating, hydraulic clamp designed as an attachment for fork trucks.

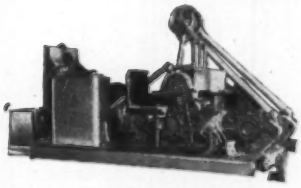
When placed on a standard 6,000-lb capacity truck, the clamp can pick up a 3,500-lb load of tile or similar material between its fixed forks and hydraulically operated clamp blades. The tiles then can be rotated through a 360-deg circle at any point in the vertical travel of the forks to suit storage or loading requirements. Facings of both forks and clamps are fitted with a rubber and plastic cover to insure a tight grip and prevent damage to the load.

In any position around its full circle of rotation the clamp can be opened to a distance of 41 in. from the fork facings. The minimum distance to which clamp can be closed is 17 in.

Levers on the cowl of the Yale lift truck control both the clamping and rotating actions. THE YALE AND TOWNE MFG. CO., 11,000 ROOSEVELT BLVD., PHILADELPHIA 15, PA.



Comparison proves the MICHIGAN 3/8-yd. Truck Hoe YOUR BEST BUY



Upper Mechanism

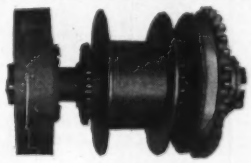
The MICHIGAN® TM-6 is a heavy duty 3/8 yd. 7½ ton upper mechanism for mounting on your own truck or at the factory on a new 6x4 or 6x6 truck. The TM-6 is available on the Clark Lease Plan. Write for Bulletin 111.

Power Control

Air Controls are standard on all MICHIGANs . . . fast, smooth, precise, with low operator fatigue. No heavy levers to push or pull—air rams do the actual work.

Smooth Clutches

There's nothing smoother than MICHIGAN air-operated segmented disc clutches . . . and they are self-compensating for heat, self-ventilating and self-cleaning. All segments are interchangeable.

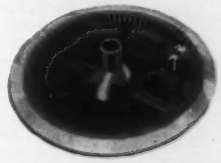


Power Load-Lowering

Four shafts on the TM-6: Swing, Hoist, Intermediate and Crowd . . . each with its independent clutches. For precision crane work, the hoist line can be reeved on the front drum to provide Power-Up and Power-Down.

Hook Rollers

You can swing the boom by leaning against it. There are 5 ball bearing-mounted adjustable rollers on the TM-6 . . . grease twice a year. Most other 3/8-yd. machines have only 3 rollers, bushing-mounted.



Cast Steel Circle Gear

Center post and circle gear is heavy one-piece casting of alloy steel. Pinion gear is cut from alloy steel for smooth, quiet operation. Roller paths are machined to a smooth finish, top and bottom.

Write for 12-page booklet, "More Yardage through Air Power" which documents the operating and maintenance advantages of MICHIGAN air controls.

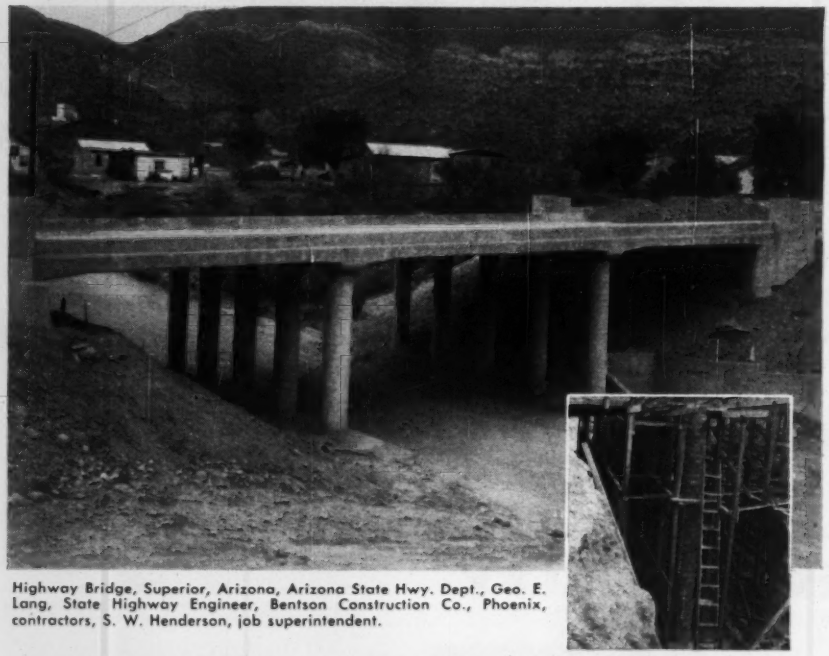
CLARK EQUIPMENT

CLARK EQUIPMENT COMPANY
Construction Machinery Division
390 Second Street, Benton Harbor 31, Michigan
Phone: WA 6-6184

SONOTUBE®

FIBRE FORMS

for round columns of concrete



Highway Bridge, Superior, Arizona, Arizona State Hwy. Dept., Geo. E. Lang, State Highway Engineer, Bentson Construction Co., Phoenix, contractors, S. W. Henderson, job superintendent.

Labor-saving columns for bridge piers!

. . . low cost SONOTUBES® make it possible

SONOTUBES were used to form the round concrete pier columns for the Arizona State Highway Department bridge at Superior, Arizona.

Quick-time and material-saving erection was only one of the many advantages gained by the use of these fibre forms. Form oiling was completely eliminated; forms were easier to strip and the resulting concrete surface was smooth and dense and no hand rubbing was required.

These 24' SONOTUBES, 24" I. D., were poured in one rapid, practically continuous, operation.

Save time, money and labor . . . use SONOTUBE Fibre Forms to erect round columns of concrete!

Available in 26 sizes from 2" to 36" I. D. up to 50' long. Can be ordered in specified lengths or sawed to your requirements on the job.

Use Sonoco's patented "A-Coated" Sonotubes for finished columns; wax coated also available.

sonoco — SERVES THE WORLD — PAPER CARRIERS

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See our catalog in Sweet's

for complete technical data and prices, write

SONOCO PRODUCTS COMPANY
Construction Products Division
LOS ANGELES, CAL. — HARTSVILLE, S. C. — MAIN PLANT — MONTCLAIR, N. J.
AKRON, IND. — BRANTFORD, ONT.

MEXICO: Sonoco de México, S. A., Apartado 10239, México, D. F.

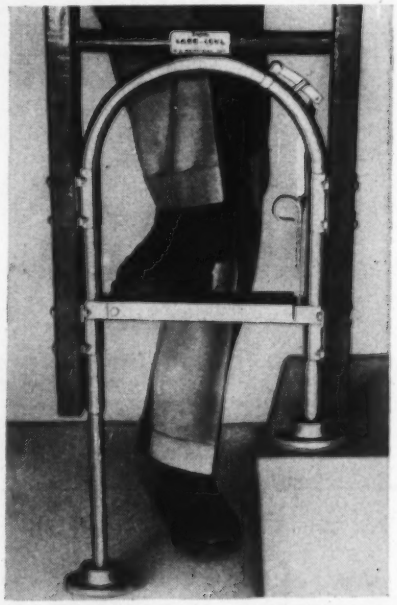
utes without disturbing the piping, and the ejector assembly also can be changed in a matter of minutes.

The ejector has been redesigned to integrate the nozzle and throat into a single unit to assure alignment for greater vacuum efficiency and permit removal of the complete assembly without disturbing the piping.

The new model uses three O-ring plug connectors on internal piping in the vacuum system to give access to the system at any point to measure pressure with a manometer.

The standard, manually-operated Figure 1050-A chlorinator can be converted to operation with pump sequencing systems, control programs, automatic proportioning and remote control by adding standard accessories.

The same automatic proportioning chlorinator can be used with all types of primary flow measuring elements—differential pressure, open-channel, and rotating meters—so that a single unit can serve as a stand-by for multiple chlorinators operating off a variety of primary meters. Accuracy of the automatic proportioning units is reportedly within plus-or-minus 4% over a five-to-one range. FISCHER AND PORTER CO., HATBORO, PA.



Safety Device Levels Ladders

A safety device, patented under the name of Ladr-Levl, can be attached to any ladder and self-adjusting legs adapt themselves to uneven terrain to permit the ladder to stand upright. For use on stairways or steps, its legs take a full 9½-in. riser. Slipping is prevented by non-skid, swiveling feet. H-B Industries, Inc., 1401 Middle Harbor Rd., Oakland, Calif.

Wire-Braid Hose Specially Designed for Pile Drivers

A wire-braid hose designed especially for pile driver service reportedly will handle saturated steam at 385 F at 200 psi. It is available in four sizes —1¼, 2, 2½, and 3-in. ID.

Two braids of steel wire are said to prevent sudden bursting of the hose, and a special braiding pattern allegedly develops a positive bonding of the tube and cover to the reinforcement. One ply of insulation is mechanically fixed between the braids.

A bond between the couplings and the outside wire braid provides a static ground permitting use in areas where flammable liquids are present.

Powerflex pile driver hose is available in 50-ft lengths with a weight (per 50 ft) range of 100.5 lb for the 1¼-in. size to 197 lb for the 3-in. size. THERMOID CO., 400 WHITEHEAD RD., TRENTON, N. J.

Testing Machine Said to Make Fast On-The-Job Checks

A portable unconfined compression testing machine for soils is said to make possible rapid job site or laboratory testing to determine stress and strain relationships of soils for foundation design and construction control.

The hydraulically operated tester has a total load capacity of 500 lb. with loads measured on a sensitive double proving ring assembly. Specimens up to 2½ in. in dia can be tested.

The portable testing machine has a one piece aluminum base with integral air and fluid reservoirs. Total weight is 35 lb. SOILTEST, INC., 4711 W. NORTH AVE., CHICAGO, ILL.

Anchor for Tying Equipment To Concrete Is Adjustable

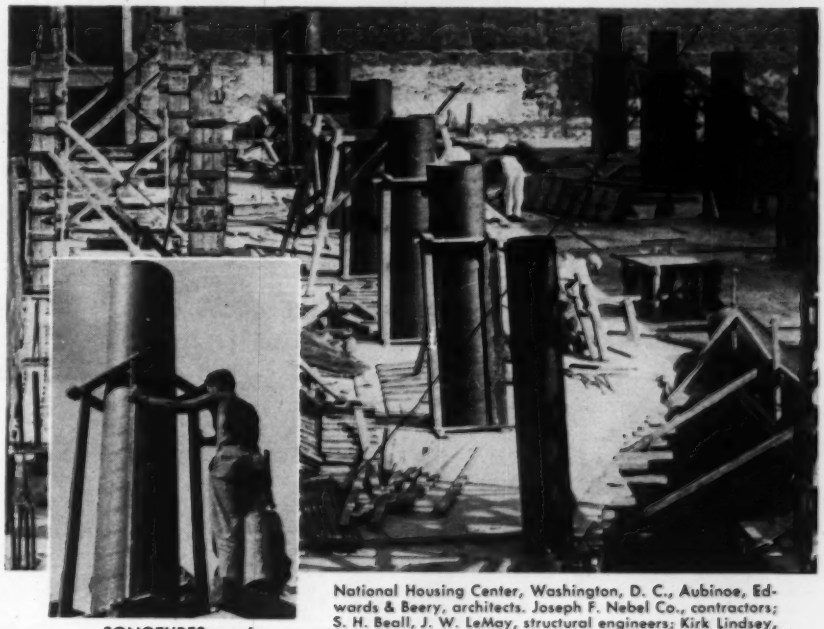
A device for anchoring equipment to concrete is designed to be adjusted vertically to eliminate the use of shims for leveling and can also be adjusted horizontally in two planes. According to the manufacturer, the anchor can be set surfaced, semi-flushed, flushed or recessed in concrete. It is said too that it can be welded to columns, beams, etc. or bolted to wood or metal and still be adjustable in three dimensions.

A standard hex or square head machine bolt is used as the anchor bolt and it is inserted only when needed. This would eliminate the hazard of anchor bolts protruding. Further, in tests conducted at a Washington school, a 32,750-lb pull broke a 1-in. machine bolt but failed to permanently distort the anchor. ADJUSTABLE ANCHOR CORP., BOX 385, RICHLAND, WASH.

SONOTUBE®

FIBRE FORMS

for round columns of concrete



SONOTUBES require minimum bracing.

National Housing Center, Washington, D. C., Aubinoe, Edwards & Beery, architects. Joseph F. Nebel Co., contractors; S. H. Beall, J. W. LeMay, structural engineers; Kirk Lindsey, concrete construction.

Fewer man-hours on the job!

...low cost SONOTUBES® make it possible

SONOTUBE Fibre Forms were used "from the ground up" to form the round columns of concrete in the construction of the new National Housing Center, "Home Center of America", Washington, D. C., sponsored by the National Association of Home Builders.

This low-cost formwork takes less time to erect because only minimum bracing is required. SONOTUBES are lightweight and easily handled and can be sawed to specific lengths on the job. SONOTUBE Fibre Forms provide a fast, economical method of forming round concrete columns. Approved by architects and engineers and widely used by contractors everywhere.

Save time, money and labor . . . use SONOTUBE Fibre Forms to erect round columns of concrete!

Available in 26 sizes from 2" to 36" I. D. up to 50' long. Can be ordered in specified lengths or sawed to your requirements on the job.

Use Sonoco's patented "A-Coated" Sonotubes for finished columns; wax coated also available.

See our catalog in Sweet's

for complete technical data and prices, write

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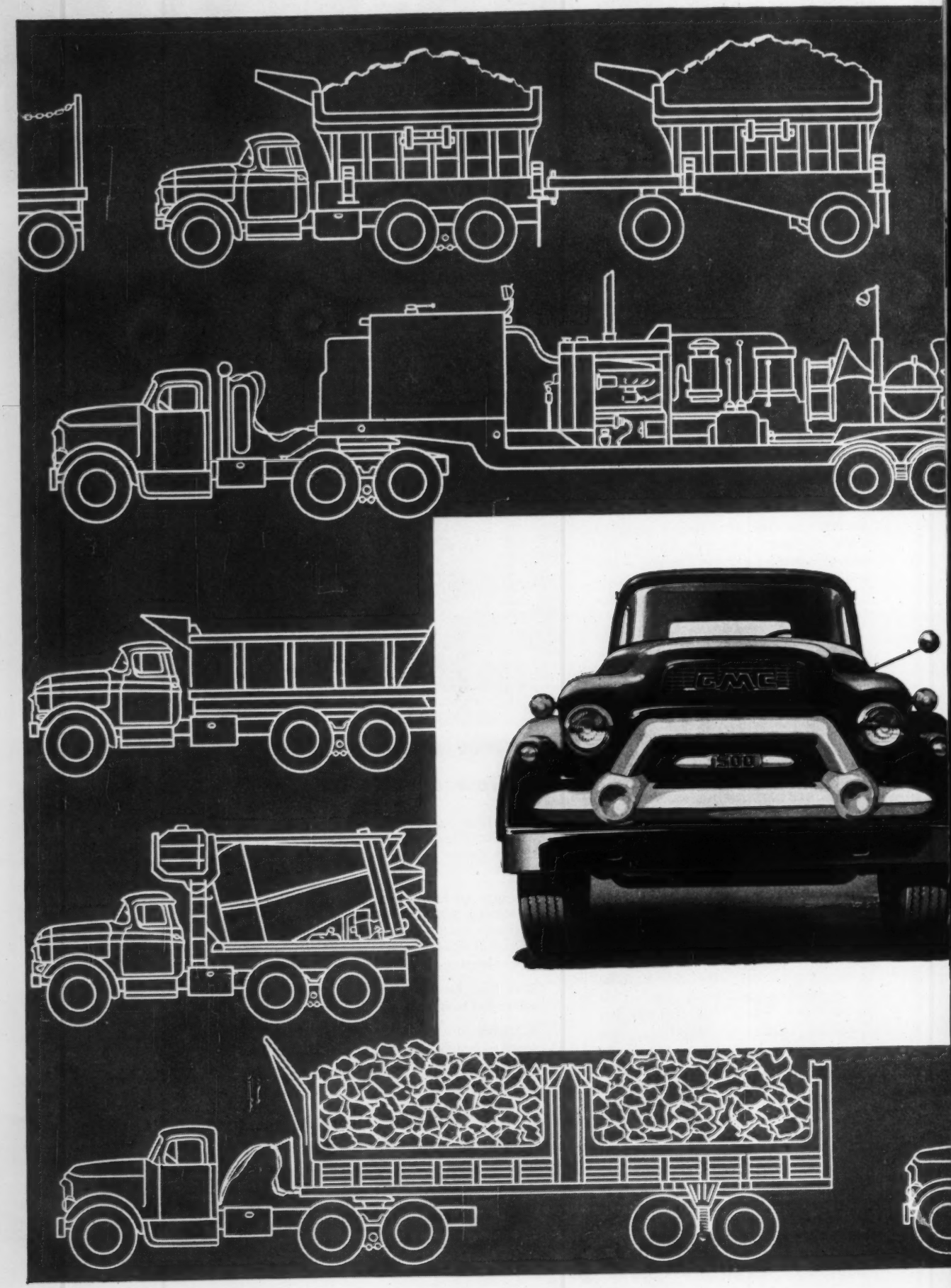
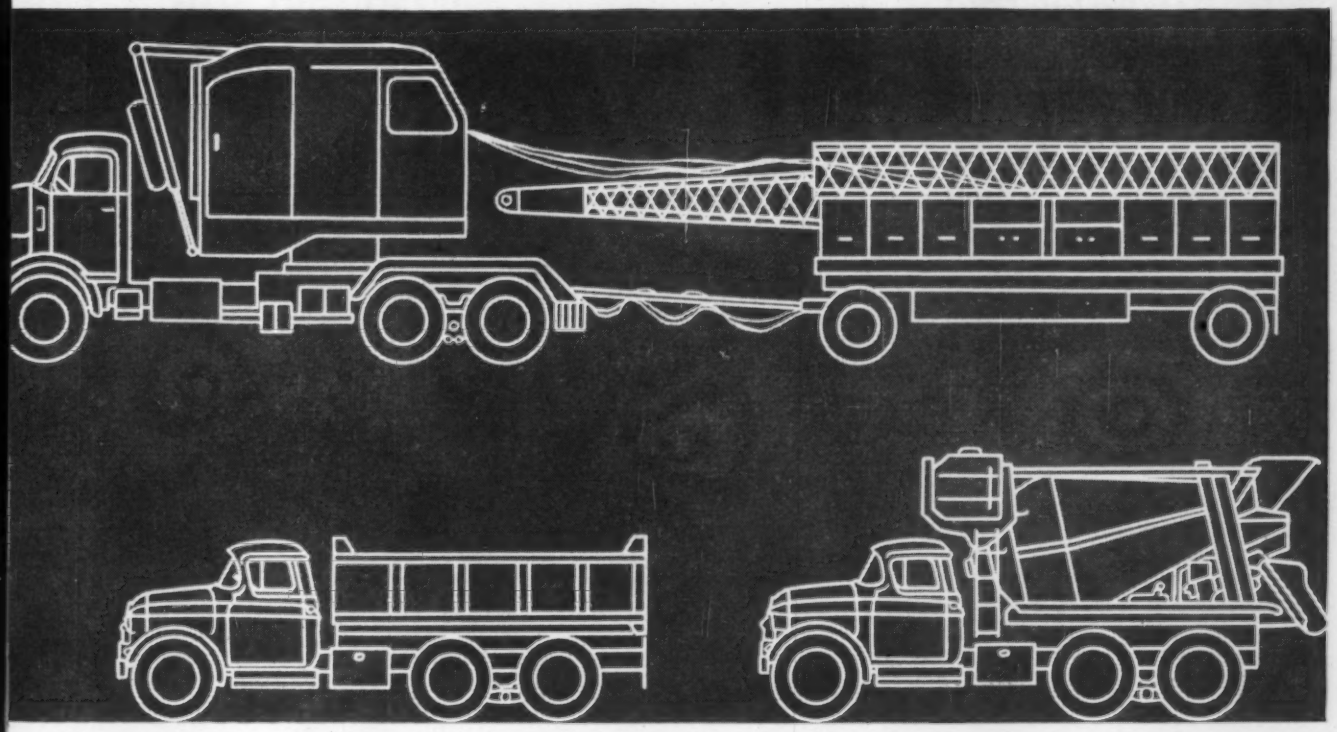

GMC
500

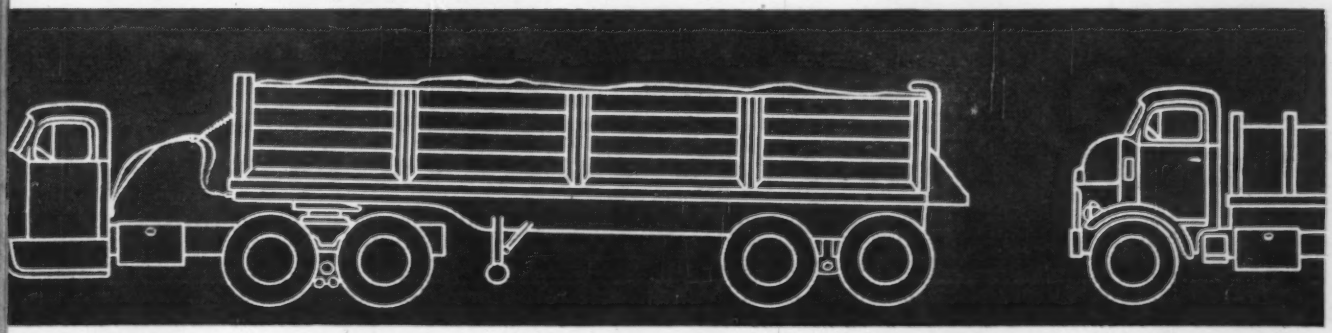


No MATTER what you haul—or where you haul it—you'll find a new GMC Blue Chip tandem-axle model engineered to handle bigger loads—faster—with lower running costs—less time out for repairs—greater driver comfort—in more safety—over a longer truck-life—than ever before. For proof, see your GMC dealer *now!*

You can cash in on Blue Chip tandem-axle advantages . . .

- in 19 models from 28,000 to 59,000 GVW
  40,000 to 90,000 GCW
- with a choice of gasoline and Diesel power—155 to 230 h. p. including new 175-h.p. V8.
- with a wide selection of wheelbases from 146 to 224 inches.
- with up to 11% greater frame ruggedness—plus full-length frame reinforcements available as a factory-installed option.
- with time-saving, money-saving, truck-saving Hydra-Matic in 9 models throughout the range.
- with improved turning ability for close-quarter maneuvering and work in traffic.

GMC TRUCK & COACH—*A General Motors Division*



At Charlotte, N. C.

WORLD'S LARGEST STRUCTURAL STEEL DOME spans 332 feet

WELDED DESIGN BUILDS IT SIMPLER,

. . . at lower cost

CONSIDERED the world's largest structural steel dome, the $4,750,000 Coliseum at Charlotte, North Carolina, spans 332 feet, rises 112 feet above street level. Designed for welding, the round shape provides the greatest useable area for the perimeter, with maximum economy in construction.

An all-welded steel tension ring, 32″ x 2½″ and 332 feet in diameter, absorbs high tensile stresses from the thrust of the dome. Main radial ribs for the dome are 18 in. WF beams made up of seven 22 ft. 6 in. sections. The main ribs are assembled on the site by welding, erected and field-welded in place using Lincoln "Fleetweld 5" electrodes and "Shield-Arc" engine-driven arc welders. Fabricators and Erectors: Southern Engineering Company, Charlotte, North Carolina.

Facts on structural design are available to designers and structural engineers in Lincoln Studies in Structural Arc Welding. Write

Dependable Welding at Low Cost *is why Lincoln "Fleetweld 5 (E-6010)" is preferred on more construction than any other electrode.*

THE LINCOLN ELECTRIC COMPANY

Dept. 2305 • Cleveland 17, Ohio

The World's Largest Manufacturer of Arc Welding Equipment

Col. Clarence Renshaw

Division Engineer

Renshaw gets command of North Atlantic Division

Col. Clarence Renshaw has been designated division engineer of the Corps of Engineers' North Atlantic Division, embracing the districts of New York, Philadelphia, Baltimore, Washington, D. C., Norfolk and Eastern Ocean. He reported to the division last year as assistant division engineer, after serving two years as district engineer in Okinawa.

Although Col. Renshaw's military career has been in the civil engineering and construction fields, he was originally commissioned in the Quartermaster Corps when he was graduated from West Point in 1929. His transfer to the Corps of Engineers occured in 1941, when he was stationed in Washington as officer-in-charge of construction of the Pentagon.

In addition to his construction work with the Quartermaster Corps, Col. Renshaw has served as district engineer in Washington, Philadelphia and New York. After the war, he organized the Manila District and was in command of military construction and rehabilitation of all Philippine ports and harbors. He later served for two years with Air Installations, U.S. Air Force and, in 1950, was assigned to the Northeast District as district engineer.

Col. Renshaw holds two degrees—a Bachelor of Science in Building Construction and a Master of Science in Business and Engineering Administration—from Massachusetts Institute of Technology, and is a graduate of the Armed Forces Industrial College.

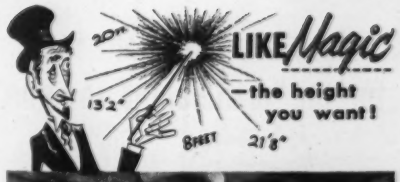
Zimmerman Is Appointed Chief Highway Engineer

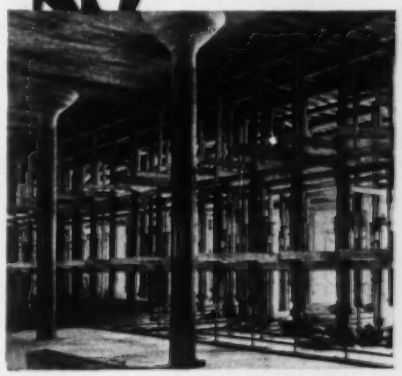
The Minnesota Civil Service Department has approved the appointment of L. P. Zimmerman, county engineer, as chief engineer of the Minnesota Highway Department. Zimmerman will succeed O. L. Kipp, assistant commissioner and chief engineer, who has elected retirement, although he will continue to serve the department in a consulting capacity.

Zimmerman's career in highway engineering and administration began with highway summer work in 1914, when he was a civil engineering student at the University of Minnesota. His first permanent appointment was as a county engineer in 1919, following overseas service with the 45th Engineers on railroad construction and maintenance. Since then, he has held a number of important engineering posts within the department, includ-

ASEE's New President

Maynard M. Boring (left), consultant on manpower at the General Electric Company, is congratulated on his election as president of the American Society for Engineering Education (ENR June 30, p. 26) by Nathan W. Dougherty, out-going president of ASEE. Dougherty paid tribute to Boring as a long-time friend and supporter of American engineering education.



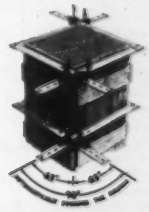


the New
ROOSHOR
EXTENSION TYPE

For every shoring job . . . regardless of height . . . the new ROOSHOR, Extension Type, provides the fast, efficient and economical method. This new ROOSHOR may be used as a flat-head shore, or, by merely inserting any length S4S 4 x 4, as an extension shore or, as a male-head shore . . . one type shore does all of this. Wooden upper members make it easy to nail bracing when needed. Available in two sizes giving adjustments from 6' to 10'-6" or 8' to 14.'

STANDARD ROOSHOR

Instantly adjustable to accurate height—without pins or screws to cause needless delays. Three sizes, giving adjustment from 8' to 14', 7' to 13' and 5' to 9'.



ROOS COLUMN CLAMPS

The job-proven answer to column forming accuracy . . . two identical hinged units . . . no wrong way to put them on . . . no loose parts. Rooshors and Roos Column Clamps are available for rental with purchase option from warehouse stocks in principal cities. Write for Bulletin 455.

BAKER-ROOS, INC. ENR
P. O. Box 892, Indianapolis 6, Indiana.
Please rush additional information on Rooshors and Roos Column Clamps without any obligation.
Name_____
Company_____
Address_____
City_____ State_____

Here are important facts for the "man behind the gun"

This White 18" Dumpy level has ...more of the features you want, yet costs you less!

Before you buy, compare this White Dumpy level with a similar model of any other recognized make. From every standpoint — design detail . . . quality construction . . . work-speeding, life-lengthening features and cost — you'll quickly see why a White's the best buy you can make. It will make your work faster, easier, more accurate. Check this comparison chart:

FEATURES	D. White No. 7080	Instrument A	Instrument B
Magnifying power of telescope	35X	30X	27X
Distance away you can read 1/100 ft. graduation	1200 ft.	1050 ft.	900 ft.
Diameter of objective lens	1.81 in.	1.485 in.	1.69 in.
Field of view (in minutes of arc)	64′	52′	60′
Coated optics	YES	YES	YES
Covered leveling screws	YES	YES	YES
Can you easily replace worn leveling screws in the field?	YES	NO	YES
Sensitivity of level vial (in seconds of arc per 2mm of graduation)	20″	20″	25″
Price — complete with carrying case, tripod and accessories — F.O.B. factory	$295.00*	higher	higher

For complete details on the 18-in. Dumpy level and other equally fine engineering instruments, see your David White dealer, or write direct to DAVID WHITE CO., 359 W. Court Street, Milwaukee 12, Wisconsin.

DAVID WHITE COMPANY

We offer complete, expert repair service on all makes, all types of instruments.

**Price subject to change without notice.*

ing that of district engineer for the Twin Cities area.

Granted a leave of absence in 1933, Zimmerman became the first state engineer for the Civil Works Administration, preparing and supervising the Minnesota work relief programs. He was later named state relief administrator and served on the State Planning Board and as president of the Rural Rehabilitation Administration.

Before returning to the highway department in 1943, he entered the private practice of engineering. In this capacity, he supervised construction work on several dams in Montana, was engineer-coordinator on three Arkansas airports, and was maintenance supervisor for one section of the Alcan Highway.

Institute of Architects Honors Louis Rossetti

The American Institute of Architects has elected Louis Rossetti, Detroit architect and civil engineer, to its College of Fellows for his achievements in design. The honor was conferred at the Institute's annual convention in Minneapolis.

Rossetti is chief architect of Giffels & Vallet, Inc., L. Rossetti, associated engineers and architects in Detroit. Current work of the firm under his direction includes the Convention-Exhibits Building soon to be erected at Detroit's new Civic Center. Among the structures for which Rossetti has been honored previously are the Veterans Administration General Hospital in Fort Wayne, Ind., and the Hekman Biscuit Company building in Grand Rapids, Mich.

Born in Paris, Rossetti completed his undergraduate work at the College of Engineering in Berlin and obtained his professional degrees at the Royal Institute of Applied Engineering in Rome.

Soils Engineer Appointed To Ohio University Post

Hamilton Gray, professor of civil engineering at the University of Maine, has been appointed chairman of the department of civil engineering at the College of Engineering, Ohio State University. He will assume his new duties, with the rank of professor, in October.

In addition to his work at the University of Maine, Gray has been soils engineer for the Maine Highway Commission for the last 10 years and has been continuously active as a consultant. Projects on which he has worked include the new Brooklyn-Battery Tunnel and Idlewild Airport in New York; Waller Dam in Virginia and the Mississippi River Bridge at Vicksburg.

Gray is secretary of the soils mechanics and foundation division of ASCE's executive committee and is a past president of the Maine Section of ASCE.

Engineers Will Study Panama Canal Zone

A study of the Panama Canal Zone will be conducted by the Engineering Research Department of North Carolina State College under the sponsorship of the Waterways Experiment Station of the Corps of Engineers.

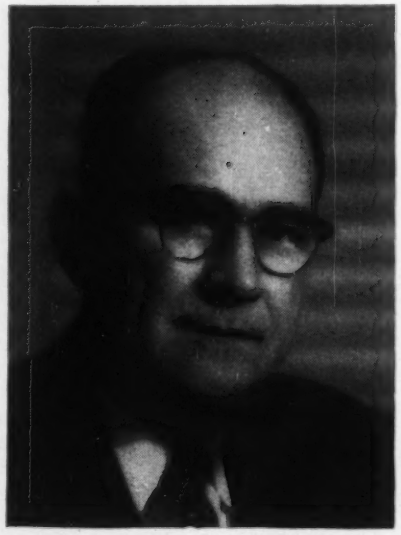
Ralph E. Fadum, head of the college's School of Engineering, and C. R. McCullough, professor of civil engineering, have been named director and associate director-engineer of the project.

The study, expected to be completed within a year will record findings for a subsequent evaluation of the Canal Zone's capabilities and its personnel and material requirements. Comparisons will be made with other tropical areas.

John Kirkpatrick Appointed Ferguson's Western Manager

John B. Kirkpatrick, vice president and director of the H. K. Ferguson Company, Cleveland, Ohio, has been appointed manager of the company's western district, with headquarters in San Francisco. He succeeds C. J. Haglund, who has resigned because of ill health.

Before joining the Cleveland firm in 1950, Kirkpatrick was associated



J. B. Kirkpatrick

13 pay yds. in 30 seconds

Fast loading helps 2 C Tournapulls move 140,000 yds. in only 15 weeks

How much dirt does a 16-heaped-yard scraper, like the C Tournapull, actually carry? Here's a report that gives you an accurate answer based on loads weighed by an impartial engineer.

The job studied was a three-mile regrading of U.S. 14 near Barrington, Illinois. Contractor Eric Bolander of Libertyville, Ill., had two C Tournapulls (without sideboards) working here to move 140,000 yds. of wet sandy clay and topsoil. This material weighed about 3,150 lbs. per cu. yd. Using this, and machine empty weight, as base figures, scales were set on a level stretch of pavement and loads weighed at random. The average load for both machines was 42,430 lbs. of pay dirt. On a yardage basis, weights showed each C Tournapull carried between 13 to 13½ pay yards per load.

11 minutes for 3-mile cycles
3 minutes for 1200-ft. cycles

At other times during the day, engineers also studied other parts of the cycle. They found load times, with 148 hp pusher, averaged about 30 seconds. This fast loading helped each Tournapull average 5 trips per 55-minute hour on a typical 1½ mile one-way haul. On a short 600-ft haul, each averaged 18 trips per hour.

Only 2 hours downtime in 3½ months of work

From Bolander's records came more interesting figures. During the entire 3½-month, 600-hour work period, contractor's 2 "C's" lost a total of only 2 hours for repairs. Daily lubrication took about 15 minutes less time per shift than crawlers used to. Tire condition was reported "excellent" at the end of the job (hour-meters had then reached the 2,000 working hour mark).

Said Bolander's general superintendent, Don Vanderspool, "The remarkable features of the Tournapulls are their dependability, and their ability to work when the going gets rough. Our operators like 'em — and we like 'em. With just the 2 "C's" and a pusher, we finished this job in 75 working days — well ahead of schedule! Mr. Eric Bolander, the owner, is highly pleased, and now after a year's experience with them, feels the C Tournapulls were an excellent choice!"

Weighed on highway job near Barrington, Ill., "C" loads averaged 42,430 lbs. net (13 to 13½ pay yds.) in sandy topsoil. Similar loads were recorded on another Bolander job — leveling for the 1,000 unit Centex Housing project at Waukegan. Machines were without sideboards on both jobs.

NOW . . . a size Tournapull TO FIT YOUR NEEDS

Model B . . . 23 yds. heaped Model C . . . 16 yds. heaped Model D . . . 7 yds. heaped

Tournapull—Trademark Reg. U.S. Pat. Off. P-776-H-b

To see Tournapulls in action . . . call, write, or wire . . .

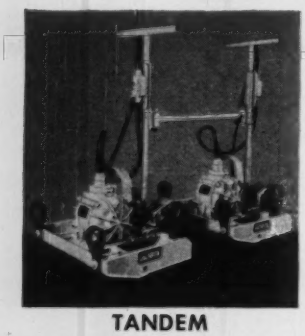
A Subsidiary of Westinghouse Air Brake Company

LeTourneau-Westinghouse Company

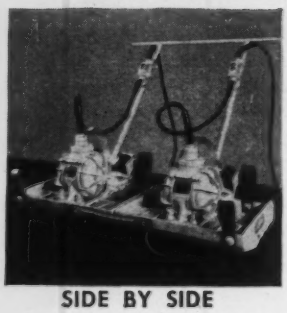
PEORIA, ILLINOIS

JACKSON
TWIN-COMPACTOR UNITS

SPEED PROGRESS - CUT COSTS!



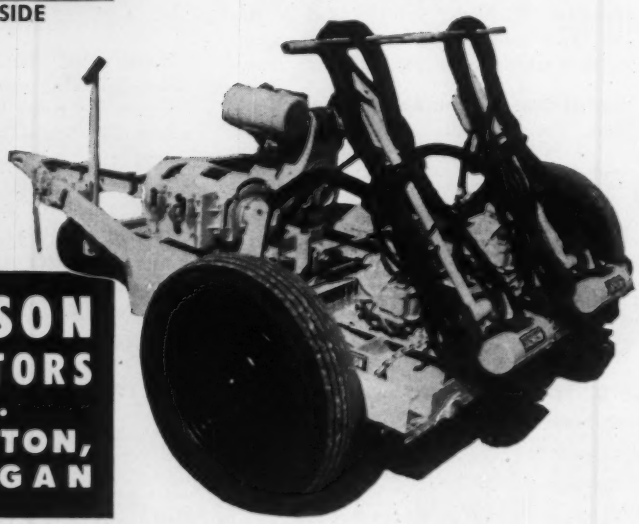
TANDEM



SIDE BY SIDE

The Jackson Vibratory Compactor, which has proved so exceedingly effective in blacktop pavement widening and patching, paving walks, drives, railway platforms and street crossings, as well as compacting granular soils and crushed rock in sub-bases, bridge approaches etc., is now available in TWIN-UNITS . . . for side-by-side or tandem operation. With either of these twin-unit hook-ups, since they are self-propelling, one operator, in most applications, can readily accomplish twice as much as with a single unit — thus speeding progress and halving labor costs. Compacting upwards of 4,000 sq. ft. per hour of bituminous mix close to maximum density is not at all uncommon. For maximum mobility and time-saving convenience an auto trailer with quick pick-up of the twin-unit and mounting a power plant of more than ample capacity, is also available. The Compactor, either single or twin-unit, can be used with great effectiveness in macadam construction for the odd work not done by the larger equipment. Get the complete facts, at once.

See your JACKSON distributor
or write directly to us.



JACKSON VIBRATORS INC. LUDINGTON, MICHIGAN

with its parent organization, Morrison-Knudsen Company, Inc. of Boise, Idaho. During that period, he was general manager of a joint venture for construction of a series of Corps of Engineers' projects at Honolulu, Guam, Eniwetok and Iwo Jima, and served as project manager for the multi-million-dollar air force base at Fairfield, Calif., and for Atomic Energy Commission work at Arco, Idaho.

List of Sanitary Engineers For National Emergency Use

A National Register of Sanitary Engineers is being compiled by the Public Health Service at the request of the Office of Defense Mobilization. The listing is integrated with the efforts of the National Science Foundation to obtain complete information on trained technical and scientific personnel who might be needed in case of a national emergency (ENR, April 21, p. 82).

Professional organizations with which sanitary engineers are affiliated are cooperating. With their assistance, a master mailing list of over 10,000 sanitary engineers already has been developed.

Through use of a questionnaire, details will be obtained and recorded on each sanitary engineer's education, specialty and professional experience. When completed, the register will be maintained by the Public Health Service.

Kidde Adds Automation Unit

William Collins, president of Walter Kidde Constructors, Inc., engineers and builders of New York and Houston, has been elected president of Kidde Automation Systems, Inc., a new subsidiary established by the company to engineer and build automated warehousing systems.

The parent company has described formation of the new subsidiary as the latest step in its expanding activities in automation systems. Its Kidde Warehousing System, which uses electronically controlled conveying equipment, was introduced last April.

Canadian Engineer Named Manager of Canada House

John B. Carswell, one of Canada's leading construction engineers with offices in Toronto, has been appointed general manager of Canada House (New York) Limited.

He will divide his time between Toronto and New York, where

(*Continued on page 62*)

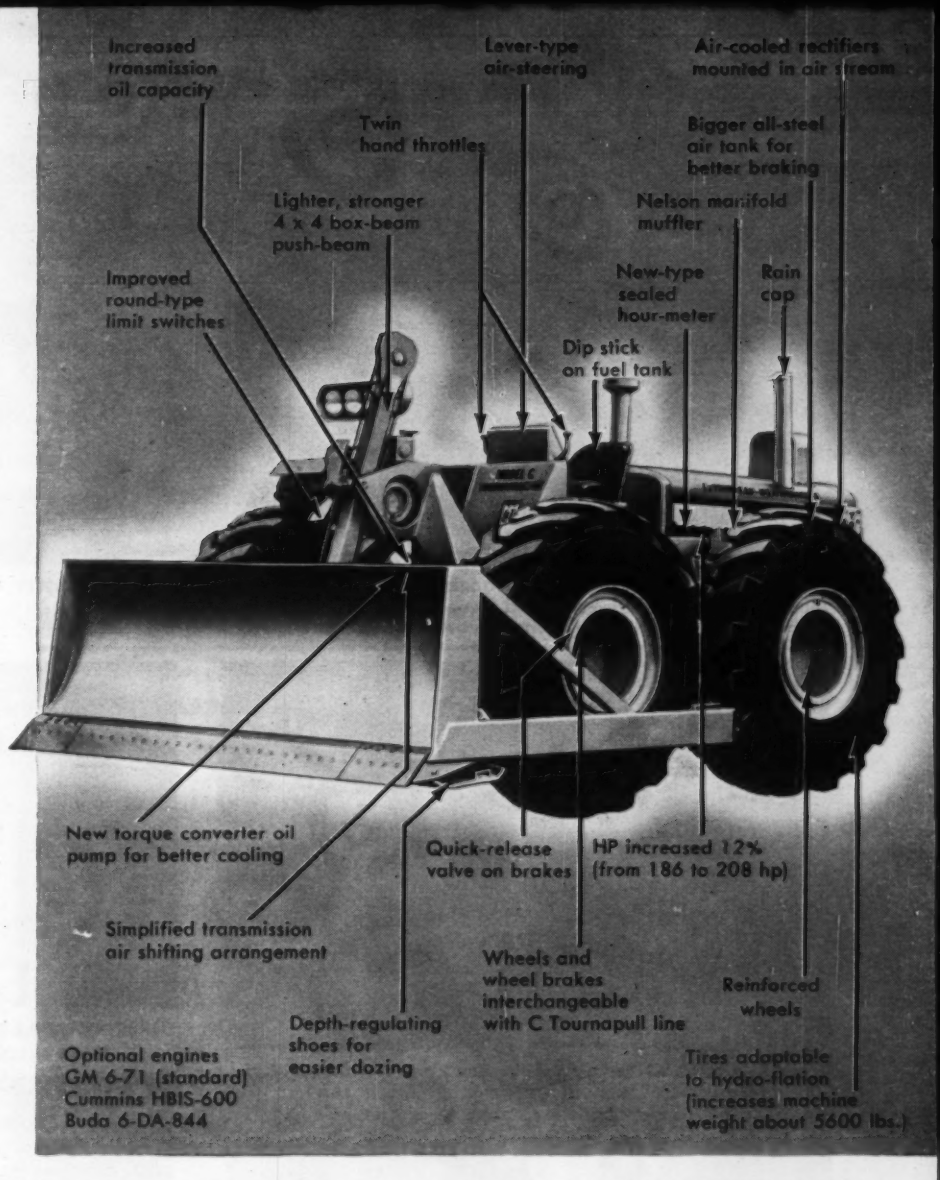
IMPORTANT CHANGES

have been made

Since the LeTourneau-Westinghouse Company was formed in 1953, many important machine improvements have been made. All these shown are standard on current-production models of the rubber-tired C Tournatractor. Study them for yourself . . . then let us show you first-hand what they can mean to you.

Ask for demonstration

Call us anytime. We'll be glad to drive a *new model* Tournatractor to your job, then work it until you're convinced. There is no obligation, no cost to you.

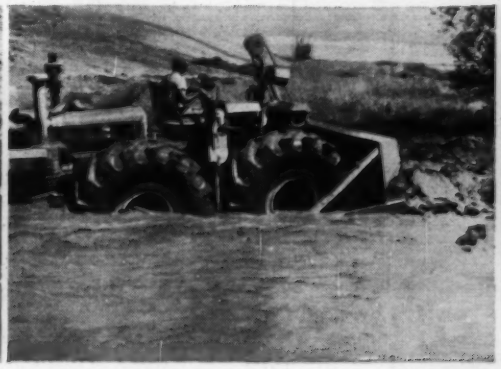

Increased transmission oil capacity
Lever-type air-steering
Air-cooled rectifiers mounted in air stream
Twin hand throttles
Bigger all-steel air tank for better braking
Lighter, stronger 4 x 4 box-beam push-beam
Nelson manifold muffler
Improved round-type limit switches
New-type sealed hour-meter
Rain cap
Dip stick on fuel tank
New torque converter oil pump for better cooling
Quick-release valve on brakes
HP increased 12% (from 186 to 208 hp)
Simplified transmission air shifting arrangement
Wheels and wheel brakes interchangeable with C Tournapull line
Reinforced wheels
Depth-regulating shoes for easier dozing
Optional engines
GM 6-71 (standard)
Cummins HBIS-600
Buda 6-DA-844
Tires adaptable to hydro-flation (increases machine weight about 5600 lbs.)

Tournatractor—Trademark Reg. U.S. Pat. Off. T-800-G-b

Breaking up rock seams, pavement, etc., Tournatractor can tackle as tough jobs as any crawler. Loading may be slower and cuts thinner on some heavy materials, but faster push and return save time. On long pushes, Tournatractor often doubles crawler output.

Tournatractor's sealed power-train takes it safely through water, mud, dust . . . prevents damage and wear to bearings and moving parts. Lubricants are not washed away nor filled with abrasives. Maintenance is lower since 4 wheels do work of 500 track parts.

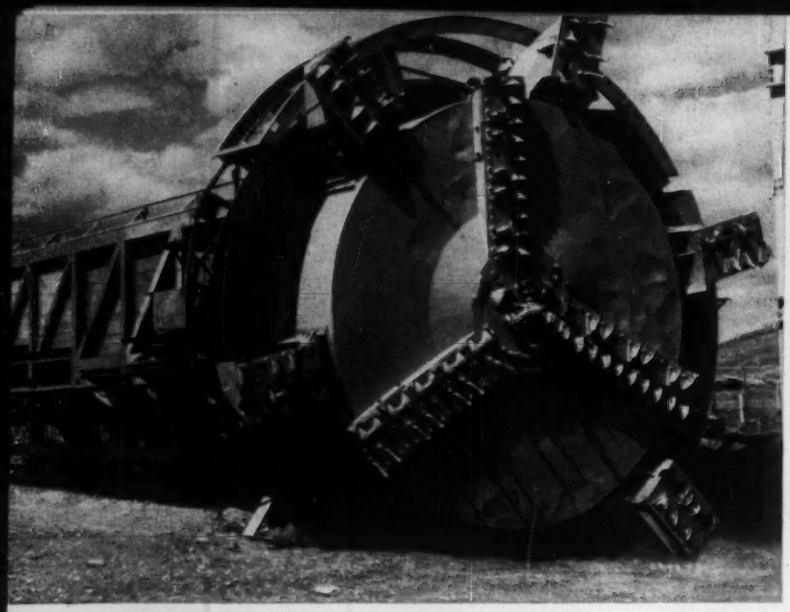
Ideal for scattered jobs, Tournatractor spends minimum time in travel. Top speed is 19 mph . . . 1,670 ft. per minute. Rig goes anywhere without planking . . . travels over pavement or cross-country . . . needs no loading, no extra men or expense for trailer-haul.



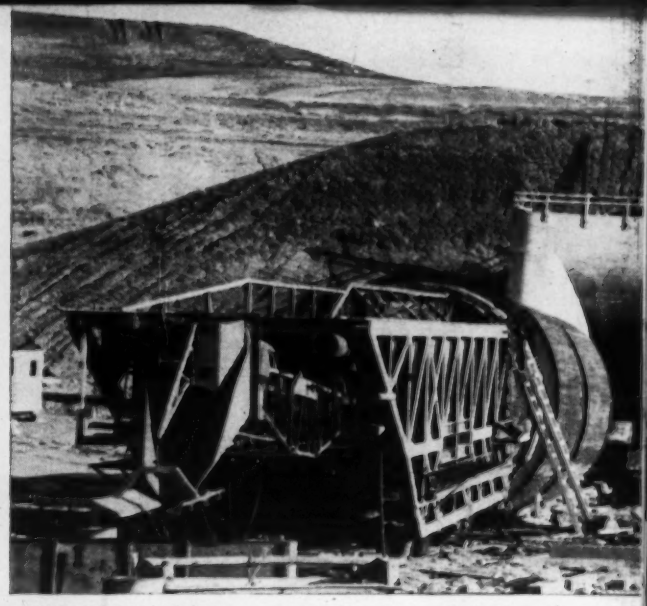
LeTourneau-WESTINGHOUSE Company

Peoria, Illinois

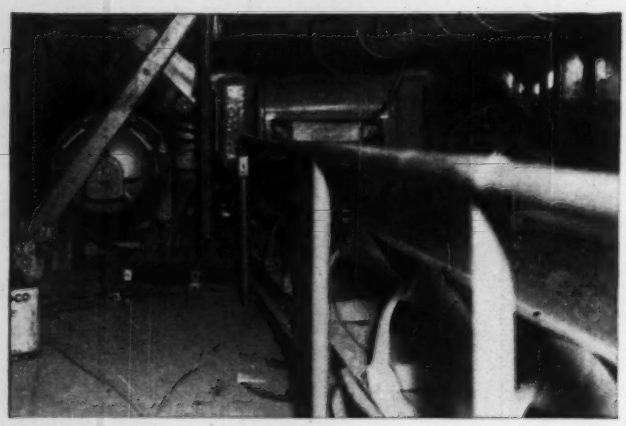
A Subsidiary of Westinghouse Air Brake Company



MECHANICAL MARVEL shows its mighty teeth. The 26-foot cutting face can be raised, lowered, and swung from side to side to alter direction of cut. Note concentric cutter heads and shale scoops.

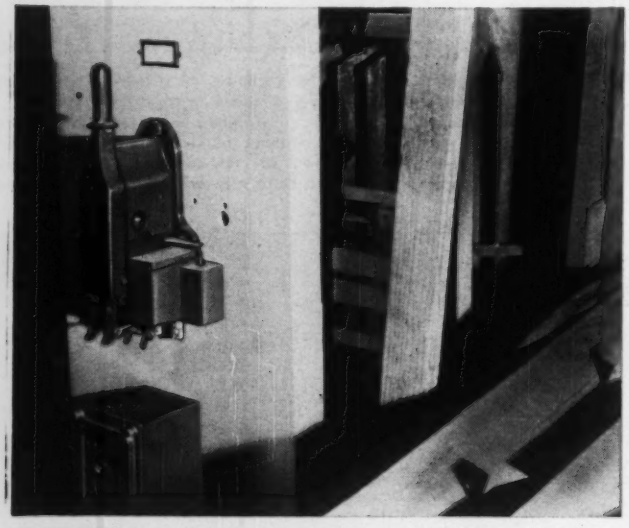


IMMENSITY OF JOB is suggested by view of six tunnel entrances bored in record time by new mole (above). Reinforced concrete tunnels average 1830 feet long.

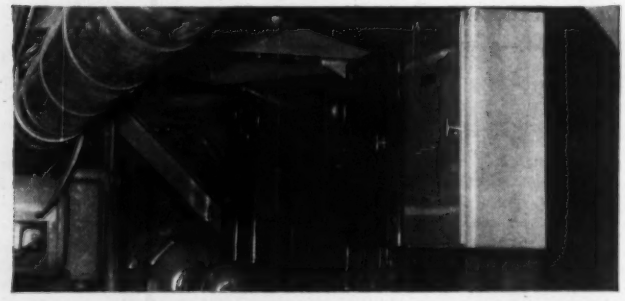


DIGGER'S RELIABILITY depends largely on performance of two 200-hp G-E wound-rotor motors driving cutters through gear mechanisms. Conveyor carries rubble to cars at rear of mole.

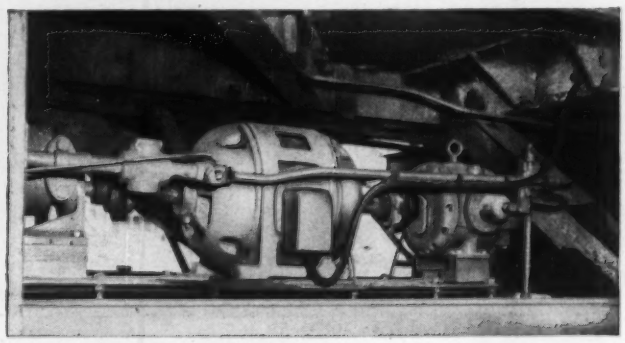
THREE COMPACT 167-kva G-E transformers in digger step down power supplied by cable from diesel-generator outside.



PROTECTION of electrical system is provided by dead-front panel with circuit breaker and ground relay. Compact General Electric equipment had to fit into tight space available.

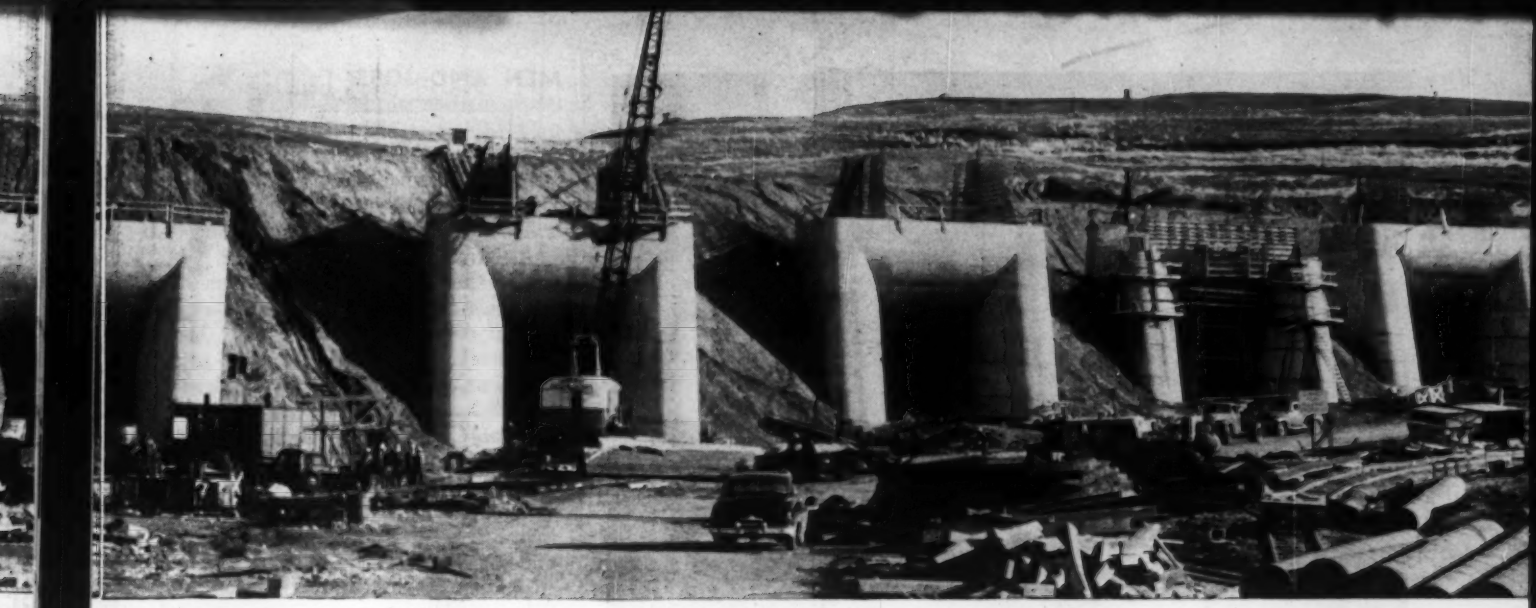


G-E MOTOR CONTROLLERS provide short circuit protection and permit centralized push-button control at operator's station.



EXACT FORWARD MOVEMENT into rock face is accomplished with highly dependable G-E 25-hp motor furnishing power for hydraulically operated "feet" which propel mole on tracks.

GENERAL ELECTRIC



Electrically powered by General Electric . . .

New giant "mole" chews tunnels 26′ wide over 4 times faster than previous methods

Mittry Constructors' tunnel digger illustrates high productivity possible with electrified tools

At the Oahe Dam of the Missouri River development near Pierre, S. D., an electrified tunnel digger 90 feet long has slashed tunneling time, costs and dangers. This imaginative use of electricity is even more successful than anticipated by its pioneering designers. James S. Robbins and Associates, Chicago, designed and built the "mole" for Mittry Constructors of Los Angeles under license from Goodman Mfg. Co., Chicago. According to Robbins, help from J. R. Porter, G-E engineer, greatly contributed to completing the digger two months ahead of schedule.

Problem was extremely difficult: How to dig six tunnels each over one-third mile long without exposing shale more than 30 days? Longer exposure would dry and dangerously weaken shale.

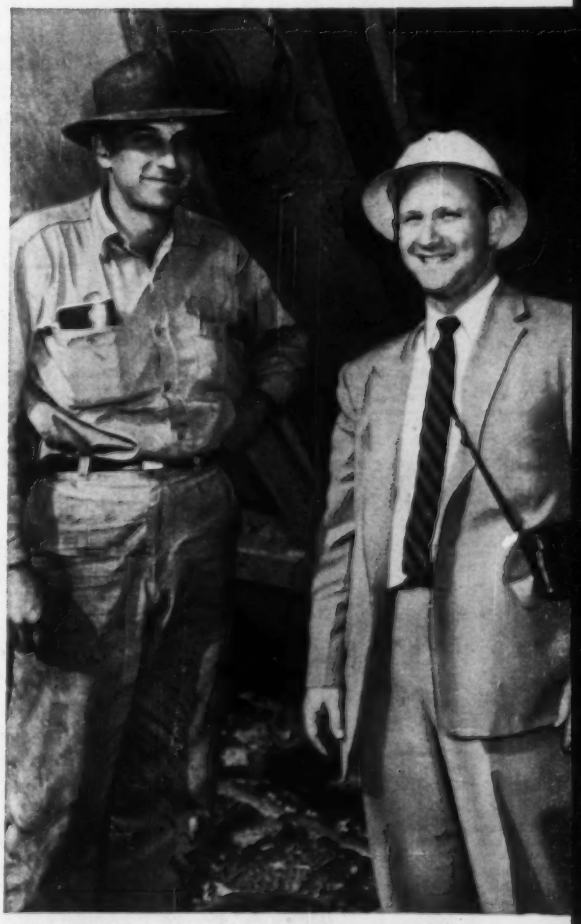
Solution was new electrified tool, which dramatically cut tunneling time to less than one fourth that needed by other methods. Digger was designed with two motor-driven concentric revolving cutter heads with large shale scoops on outside ring. Sections revolve in opposite directions to equalize cutting torque. Scoops dump shale through hopper to conveyor belt. Every four feet, a large I-beam is rammed into shale walls for support. Concrete is then pumped into forms to finish walls.

Down time has been practically zero. Despite conditions such as a constant humidity of 95% in the tunnels, G-E equipment has reliably powered this giant mole continuously and efficiently.

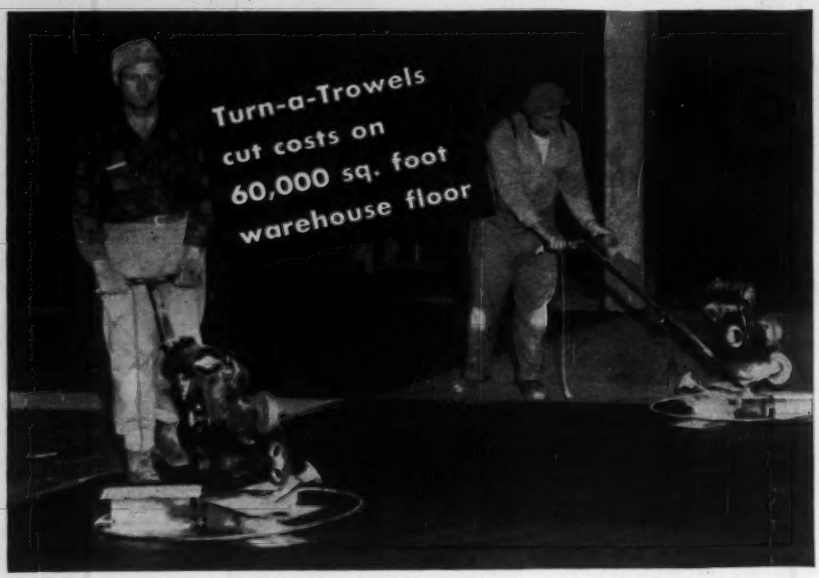
Electrified construction tools can pay off the same way for you too. Let your G-E Apparatus Sales representative show you how G-E equipment, backed by G-E engineering service, can raise tool productivity. Contact your nearest G-E Apparatus Sales office, or write General Electric, Sect. 664-37, Schenectady 5, N.Y.

Engineered Electrical Systems for Heavy Construction Tools

GENERAL ELECTRIC



STANDING BY MOLE'S "FACE" are Bill Mittry of Mittry Constructors and Jim Dillman of G.E., who helped plan the new tunnel giant.



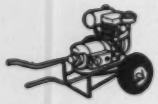
". . . they 'Mastered' the situation".

"Our Master Turn-a-Trowels knock down every hump on the floor slab." "I've used others that ride right over the uneven spots."

Contractors can make those statements because the Turn-a-Trowel has rigid—not flexible—blades. Bumps in the floor *have* to come off, so Master-finished floors are flat.

And, because Master blades *adjust* for either floating or finishing, they stay right on the machine. You can't lose or mislay them.

The Master Turn-a-Trowel is a rugged, powerful, top-quality piece of equipment that will help you finish concrete better, quicker and cheaper. Write for information on 34" and 48" models or see your Master distributor for a free demonstration.



Portable Generator Plants. AC or DC; gas, diesel, natural gas engines, ½ KW to 12.5 KW; portable mountings. Also continuous duty plants up to 20 KW Floodlights.

Concrete Vibrator. 9,000 rpm vibration, yet lightweight; rugged, gives long service; gas and elec.; wheel mounting available; accessory tools; 1½ to 6 hp power units.

Midget Trowel. New Lightweight, one man carries; gets into tight spots; only 24" across yet does top trowel job 6 times as fast as by hand. 70 lbs.; 1.6 hp engine.

Portable Space Heater. Clean, instant, odorless heat blown where you want it, rugged, longlasting, trouble-free; uses kerosene or fuel oil; 160,000 to 400,000 BTU

MASTER VIBRATOR COMPANY
600 Stanley Avenue, Dayton 1, Ohio

MASTER

"Gunite" . . . . . the sand-cement product of the "CEMENT GUN," for Concrete and Masonry Repairs, Pre-Stressed Tanks, Steel Encasement and for lining Reservoirs, Sewers and Tunnels.

CEMENT GUN COMPANY
"GUNITE" CONTRACTORS
GENERAL OFFICES—ALLENTOWN, PENNA., U.S.A.
MANUFACTURERS OF THE "CEMENT GUN"

Canada House, a multi-million-dollar structure designed for Canadian business firms and other organizations, will be erected in mid-Manhattan.

A native of Scotland, Carswell pioneered the design and construction of Canada's first airfields as chief engineer of the Aviation Department during World War I. He is senior past president of the Canadian Construction Association and, as chairman of Kitimat Constructors, recently supervised all construction work at Alcan's big Kitimat plant.

Carswell was stationed in Washington, D. C., during the last war as director-general of the offices of Canada's Department of Munitions and Supply. He was later appointed president of the Canadian War Assets Corporation.

Bert L. Wood Will Retire As Institute Consultant

The American Iron and Steel Institute, New York, has announced that Bert L. Wood will retire as consulting engineer on October 1. He will be succeeded by William G. Kirkland, former resident engineer.

During his 40 years in the steel industry, Wood has become a recognized authority on building construction standards and fire protection regulations. He has been active in the work of the National Research Council and has contributed to the concepts followed in modernizing national building standards.

Wood will continue his association with the institute as a part-time consultant.

City Planning Gets A Boost From Utility Company Gift

Two summer research fellowships in city planning have been established at Yale University under an $1,800 grant from the Connecticut Light and Power Company.

According to Christopher Tunnard, director of the Yale Graduate Program in City Planning, the grant will be used to further the university's study of a "regional city," stretching more than 600 miles from Norfolk, Va., to Portland, Me., and containing over 34,000,000 people. The study was launched in February and a report is scheduled for fall.

The fellowships have been awarded to Morton Lee Isler of Forest Hills, N. Y., and Boris Pushkarev of New Haven, Conn. Both have architectural degrees.

Men and Jobs Briefs . . .

• **Associations**—The South Carolina Society of Professional Engineers elects **Thomas A. Able** of Greenville as president . . . **George W. Poulsen,** Salt Lake City, heads up the Intermountain Institute of Consulting Engineers . . . **Rear Admiral Joe W. Stryker, USN (Ret.)** is appointed executive director of the Structural Clay Products Institute . . . **George I. Holsberg** of Charleston becomes president of the South Carolina Association of Plumbing and Heating Contractors.

• **Careers**—The New England Interstate Water Pollution Control Commission elects **Walter J. Shea,** chief sanitary engineer of the Rhode Island Department of Health, as chairman, succeeding **Roger L. Putnam** of Springfield, Mass. . . . **J. A. Donald** is appointed marine division engineer for the St. Lawrence Seaway Authority, Canadian agency for the seaway development, with headquarters in Cornwall, Ont.

Winfred W. DeMay, former assistant city engineer, is named city engineer for Hartford, Conn. . . . **Karl Woditsch** is named service director at Dayton, Ohio, succeeding **George F. Baker,** who is retiring.

• **Corps of Engineers**—In a series of reassignments affecting the Portland District in Oregon, **Col. Jackson Graham** will become district engineer in September, succeeding **Col. James U. Moorhead; Lt. Col. David S. Parker,** now executive officer, will be assistant engineer; **Lt. Col. Francis G. McBride** becomes executive officer.

• **Business**—Milwaukee consulting engineer, **Charles W. Yoder** forms a partnership with **Ned E. Fischer** under the name of Charles W. Yoder-Ned E. Fischer, Associate . . . **John B. Dodd** and **Ralston H. Miller** become associates in the New York architectural firm of LaPierre, Litchfield & Partners . . . Allis-Chalmers Manufacturing Co. realigns its operating divisions and puts vice president **W. G. Scholl** in charge of the Tractor Group, which embraces the Construction Machinery Division.

• **Retirements**—From The Austin Company, engineers and builders in Cleveland, Ohio, **Laurence E. Cooney,** vice president and director of sales and advertising, after 36 years with the firm . . . **Karl Keller,** chairman of the board and treasurer of Keuffel & Esser Company, manufacturer of drafting, reproduction and surveying equipment in Hoboken, N. J.

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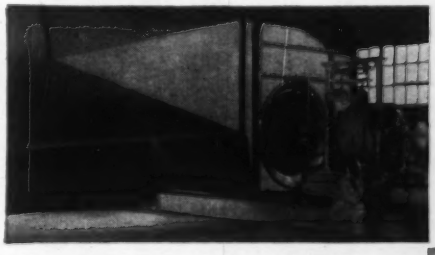

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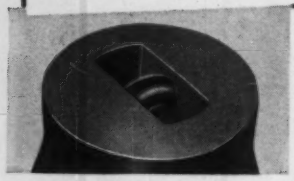

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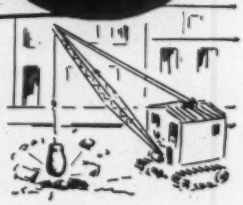

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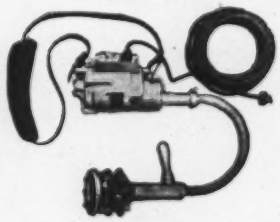

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BOOKS

Floods and Flood Control

FLOODS—By William G. Hoyt and Walter B. Langbein. 469 pp. Princeton University Press, Princeton, N. J. $7.50.

This book provides the nation with its first comprehensive look at what it has done in the way of controlling floods and of what is still proposed. Up to the end of June, 1952, the Corps of Engineers, Department of Agriculture, Tennessee Valley Authority, and Bureau of Reclamation had spent on flood-control work a total of three and one half billion dollars. An additional $7.6 billion will be needed to complete authorized projects. These figures do not include programs of the Soil Conservation Service, the Forest Service and land-management programs of the Department of Agriculture, all of which have flood control as one of their objectives. If those figures are included, the annual federal investment in flood control, including retardation of runoff and prevention of erosion can be expected to rise to around $600 million. And the total program covering money spent, projects authorized and those proposed by federal agencies adds up to around $20 billion.

Estimates of annual losses due to floods and estimates of savings resulting from past expeditures for flood-control projects are conflicting and confusing, the authors state. Estimates made by the Army Engineers a few years ago placed the potential flood damage at $809 million per year, which figure had been reduced to an actual loss of $500 million by the flood-control facilities built up to that time. The Weather Bureau put the annual loss at a much lower figure.

All of which leads the authors to recommend strongly that the government set up an impartial fact-finding in this field. At present, they say, "each of the authorities concerned with flood protection examines microscopically the sources of damage its program seeks to eliminate or reduce."

On the controversial subject of small upstream reservoirs against large ones on the main rivers, the authors say: "The value of small reservoirs, even though they are numerous, may be quite slight in giving protection to the main stream. . . . But there is no reason why small reservoirs in strategic locations might not form a valuable supplement to the large reservoirs where upstream and downstream values are both to be protected."

(*Continued on page 66*)

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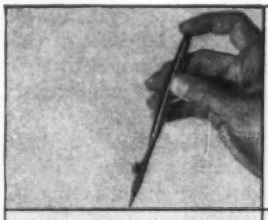
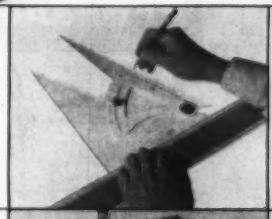


"Rule-O-Matic" Ruling Pen
Eliminate the fuss, muss, and time of filling pens from bottled ink. Just a press of the finger, and a drop of ink flows from the cartridge in the hollow handle into the stainless steel nibs. A single cartridge can rule up to 55,000 inches of a government approved India ink. Life-time guarantee.



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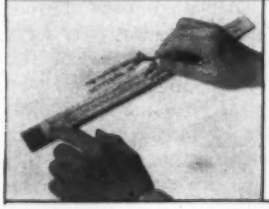

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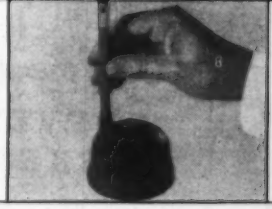

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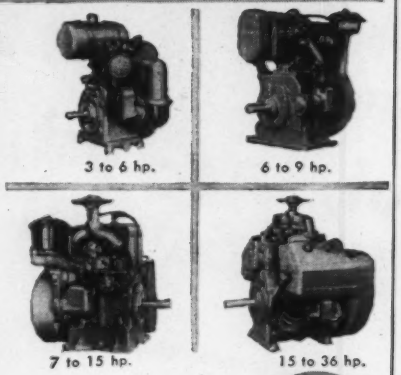

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BOOKS

And concerning the effect of contour plowing and other land use practices, the authors state that "the major effect of improved land practices is on the regimen of small streams and small floods. Great floods seem to over-power all effects of vegetation and bear more marks of the storm than of the land surface."

The authors believe that there is imperative need for a national policy of flood management in addition to a national control policy. This would recognize the hazards of flood-plain occupancy. They also hold that state and local participation in future flood-control work should be greatly expanded.

Geology for Engineers

GEOLOGY IN ENGINEERING—By J. R. Schultz and A. B. Cleaves. 592 pp. John Wiley & Sons, 440 Fourth Ave., New York 16, N. Y. $8.75.

This is a good book which should fill a real need in engineering and geological literature. Geology is of such vital importance in so many branches of civil engineering that knowledge of its main processes should be an essential part of the mental equipment of civil engineers. Acquisition of this knowledge from textbooks prepared for students of geology is not always easy, especially for those who embark on such study without a full awareness of the importance of the information they are obtaining. By a judicious combination of simple outlines of the major geological processes with comments upon the engineering significance of each of these branches of geological science, the authors of this book have produced an excellent treatise alike for students of engineering and for practicing engineers.

The association of both authors with the application of geology in civil engineering work has undoubtedly assisted them with their presentation. It is, however, notable that they have accepted the engineering use of the word "soil," and, incidentally, have returned to the original geological use of that term. This is in welcome distinction to attempts to limit this useful word to its agricultural connotation.

The authors' treatments of subsurface water, of shore lines and beaches, frost action and landslides, although always sound geologically, are yet so clearly related to engineering practice that few readers will fail to appreciate the relevance of all such geological processes to engineering work. References to snow and and ice mechanics and to permafrost provide adequate introductions to these new

How a 5½ yard shovel, spotted on narrow benches, digs and trims a 284′ deep highway cut

Manitowoc 4500 excavates 600 yards per hour for Bruns Coal Company of Zanesville, Ohio, on highway widening job at Steubenville, Ohio

The Manitowoc Model 4500 will move most of nine hundred thousand yards of material to be excavated during the widening and modernization of 1.823 miles of Ohio State Highway #7 . . . Jefferson County, Ohio. Bruns Coal Company is working their 5½ Yd. rig two 8-hour shifts per day, digging through alternate layers of slate rock, coal seams, slate clay, flint clay and boulders. Blasting ahead of the machine cannot be uniform because of the layered quality of the soil, yet the Manitowoc digs as much as 600 yards per hour.

Bruns uses six 15 Yd. Euclid hauling units moving spoil from the big cut. The narrow benches are so cramped that the shovel must swing out over the lip of the cut when loading. The Manitowoc has a ground bearing pressure of only 9.6 pounds per square inch . . . (less than most one-yard machines) — and is exceptionally compact for a big machine (tailswing radius 19′4″). These factors plus the elevated pilot house (operator's eye level — 15′) warrant record yardages without interruption of highway traffic directly below.

Another Manitowoc feature, the tubular dipper stick, has proven its worth in this excavation where the dipper encounters boulder, coal, slate, and clay during one digging cycle. Twisting, uneven digging forces only dip the dipper slightly and transmit no strain to the boom or shipper shaft, yet lift of the hoist rope maintains an upright dipper position and digging shocks are absorbed without the damage which might necessitate excessive maintenance in any other rig.

Besides the drill rig and hauling units, the Manitowoc is the only other machine on this cut. *Controlled Power* . . . Single diesel engine with a torque converter power take-off gives ample flexible power and speed. 52″ drum brakes and 49″ clutches, are air operated for the smooth, precise control necessary to cut, trim and finish this 284′ deep 1-to-1 slope!

Modern highway construction hinges on the ability and capacity of larger, more efficient equipment. More and more contractors are using Manitowoc Model 4500's for roadwork because of record capacity and extreme mobility. Bid your next job on the basis of a Manitowoc.

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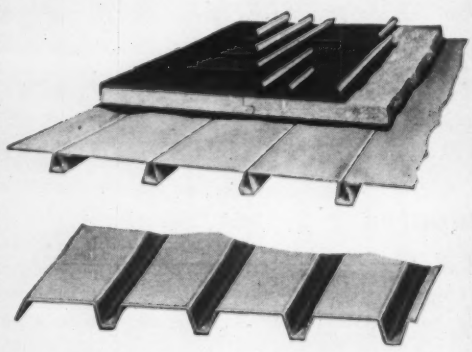

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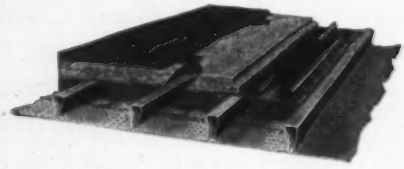

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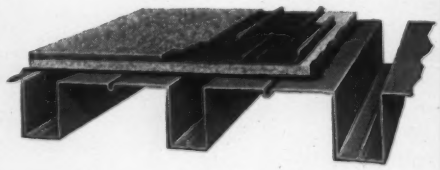

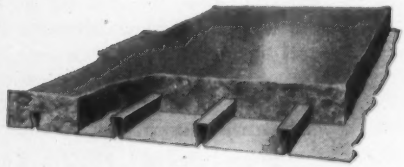

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lines of study and are further indication of the authors' close links with modern civil engineering.

Only in the four final chapters do the authors depart from the main lines of their approach for here they enter into a discussion of actual engineering works (dams, tunnels, highways, etc.). This part of the book constitutes a distinct break from the preceding eighteen chapters, the only criticism of which could be a question as to the order of the presentation.

There is so much more that could usefully be said about geological processes in their engineering context that it is to be hoped the authors will use the space alotted to these final chapters, when the time comes for revision of their book, to discuss other aspects of physical geology in the same clear way as they have followed in the main part of the volume.

This book will be useful to many engineers but its chief value should lie in introducing civil engineering students to all that geology can do to assist in engineering work, thus giving to such younger readers a guide not only to an essential scientific tool but also to knowledge which will add immeasurably to their enjoyment of the nature of the world around them. —*Reviewed by* R. F. Legget, *Director of Building Research, National Research Council, Ottawa, Ont.*

Hospital Design

A Guide to Hospital Building in Ontario—307 pp. University of Toronto Press, Toronto 4, Ont. $10.

Helpful suggestions to assist architects in the planning of hospitals for Ontario, Canada, are collected in this handbook. The recommendations undoubtedly will be found to be as useful outside of that province as inside.

The guide deals specifically with general hospitals of 200 beds, but data are included also for hospitals of 50 to 1,200 beds. Other types of hospitals are treated briefly in an appendix. Plans are for departments and rooms only, rather than complete hospitals, so that recommendations can be applied to a wide variety of needs.

New Engineering Books

Soils and Water Conservation Engineering — By Frevert, Edminster, Schwab and Barnes. 479 pp. John Wiley & Sons, 440 Fourth Ave., New York 16, N. Y. $8.00.

Standard Methods for the Examination of Water, Sewage, and Industrial Wastes—Tenth Edition. 522 pp.,

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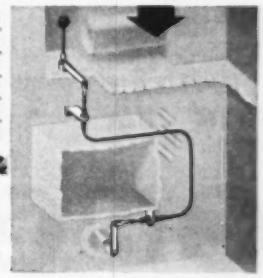

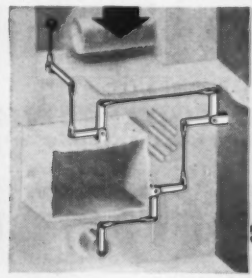

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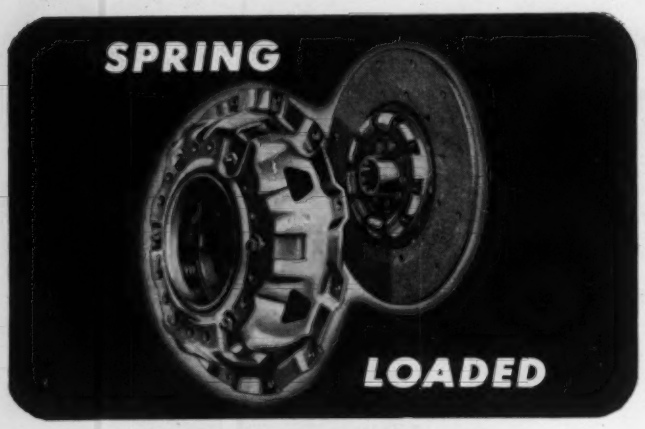

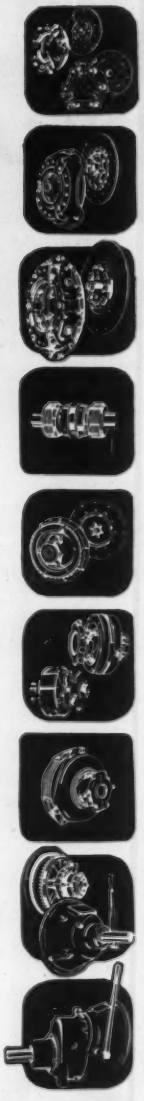

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BOOKS

American Public Health Association, 1790 Broadway, New York 19, N. Y. $7.50.

NEW RAPID TAX DEPRECIATION: HOW TO USE IT PROFITABLY—By Willard F. Stanley. 153 pp. Prentice Hall, 70 Fifth Ave., New York 11, N. Y. $15.00.

OXFORD JUNIOR ENCYCLOPAEDIA, VOLUME VIII, ENGINEERING—496 pp. Oxford University Press, 114 Fifth Ave., New York 11, N. Y. $7.00.

ENGINEERING MANUAL—The Youtz-Slick Lift Slab Method of Construction—United States Lift Slab Corp., Perry Brooks Building, Austin, Tex. $5.00.

ASTM STANDARDS ON MINERAL AGGREGATES, CONCRETE, AND NONBITUMINOUS HIGHWAY MATERIALS—339 pp. American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa. $3.50.

Reports & Pamphlets

SOIL FREEZING—Bulletin 100, Highway Research Board, 2101 Constitution, Washington, D. C. 60¢.

SOUND INSULATION OF WALL AND FLOOR CONSTRUCTIONS—Building Materials and Structures Report 144. Superintendent of Documents, Washington 25, D. C. 40¢.

DATUM PLANES IN ILLINOIS—Surveying Series No. 1. Department of Civil Engineering, University of Illinois, Urbana, Ill.

FLOODS IN ILLINOIS: MAGNITUDE AND FREQUENCY—Prepared jointly by the Illinois Division of Waterways and the Water Resources Division, U. S. Geological Survey. Obtainable from the Illinois Division of Waterways, 201 West Monroe St., Springfield, Ill.

WHERE DO WE GO FROM HERE: The Story of Modern Highways—The Caterpillar Tractor Co., Peoria 8, Ill.

OUTDOOR SWIMMING POOLS—The National Recreation Association, 8 West 8th St., New York 11, N. Y. 75¢.

TRENDS IN LAND ACQUISITION—Bulletin 101, Highway Research Board, 2101 Constitution, Washington, D. C. $1.50.

TESTS ON LARGE CULVERT PIPE—Bulletin 102, Highway Research Board, 2101 Constitution, Washington, D. C. 45¢.

SHOPPING HABITS AND TRAVEL PATTERNS: Special Report 11-B—Highway Research Board, 2101 Constitution, Washington, D. C. 75¢.

NONPROFIT RESEARCH AND PATENT MANAGEMENT ORGANIZATION—By Archie M. Palmer. Patent Policy Survey, National Research Council, 2101 Constitution Ave., Washington 25, D. C. $3.00.

"One Kompactor is doing the work of 2 crawlers and 4 tamping rollers"

says Tom Lane, Superintendent, Huron Contracting Co., Holland, Ohio

Tom Lane is working two Buffalo-Springfield K-45 Kompactors on the Huron Contracting Co.'s 8 mile section of the new Ohio Turnpike. The job calls for 2½ million yards of grade material . . . compaction specifications call for between 98 and 102 per cent.

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CONSTRUCTION REPORTS

Bids Asked—Low Bidders—Contracts Awarded—First Section—

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager
J. A. MAHONEY, M. O. WETZEL, L. M. WINISKI, M. E. SCIORRA, F. S. DEMBEK, Reports.
J. H. WEBBER, M. R. ROESSLER, E. R. HUBER, Statistics.

NEW ENGLAND

BUILDINGS—BA

Mass., New Bedford—HOUSING—BA 7/20—City, New Bedford Housing Auth., 52 Walker St., NB-667-1 Housing for elderly. $500,000. Plans deposit $35, refundable. Frost-Kandzi Assoc., 60 State St., Boston, archts. CD 8/11.

▲ **Mass., Worcester**—DORMITORY, etc.—BA 7/22—Assumption College, 670 W. Boylston St., 4 story, 40x340 ft., brick with limestone trim dormitory, Salisbury St., $650,000 Science Hall, $200,000; library, $75,000; dining hall, $150,000; heating plant, $100,000. Plans deposit $200 for dormitory, $75 each for others. Bids separately or on all 5 bldgs. O. E. Nault & Sons, 48 Hamilton St., archts. Francis S. Harvey, 141 Dewey St., Worcester, struct. engr. CD 6/7/54.

▲ **Conn., Milford** — SCHOOL — BA 7/26 — Town, Town Hall, River St., 6 school addns. Kay Ave., Lenox Ave., Pumpkin Delight, Point Beach, Seabreeze and Woodmont. $1,072,780. Jessee James Hambilin, 1188 Main St., Bridgeport, archt. CD 3/24.

▲ **Conn., Stonington**—SCHOOL—BA 7/27—Town Bd. Educ., Stonington, Junior-Senior High School, $1,600,000. Plans deposit $150. Charles A. Maguire & Assoc., Turks Head Bldg., Providence, R. I., engrs.-archts. CD 2/28/52.

▲ **Mass., Cambridge**—WAR MEMORIAL—BA 7/28—City, City Hall, War Memorial bldg., Trowbrdige and Cambridge Sts. $1,153,000. Plans deposit $100, refundable. Richard Shaw, 25 Huntington Ave., Boston, archt. Maurice A. Reidy, 101 Tremont St., Boston, struct. engr. CD 12/23/52.

▲ **Mass., Dennis**—SCHOOL—BA 8/2—Dennis-Yarmouth School Dist., Wallace Liberty, West Yarmouth regional high school, $1,500,000. Plans deposit $50. Walter M. Gaffney, West Main St., Hyannis, archt. CD 1/5.

HEAVY CONSTRUCTION—LB & CA

† **Wexler Constr. Co.**, 118 Needham St., Newton Highlands, Mass. CA $891,100, est. $1,000,000, airmen's dormitory, mess, Dow Air Force Base, ENG-19-016-55-156, BANGOR, ME. U. S. Eng., 857 Commonwealth Ave., Boston, Mass. CD 6/28, under LB.

▲ **American Paving Co.**, 500 Kensington Ave., Meriden, Conn. CA $882,661. Contr. 1. airport runway taxiways, hy. constr., municipal airport, PORTLAND, ME. City, City Hall, Portland, Me. Bids May 27. CD 5/17; **W. H. Hinman, Inc.**, 58 Main St., Westbrook, Me. CA $149,900 Contr. 4. (Portland, Me.).

NEW HAMPSHIRE — State Dpt. P. Wks. & Hys., Concord,

N. H.—**Frank Palazzi & Sons, Inc.**, 2321 Hartford Ave., Johnston, R. I., LB $666,023, constr. 2.75 mi. Class C-2 road mix hy. and 30 ft. rein.-con. frame bridge in connection with F. E. Everett Turnpike in Hooksett;

N. H.—**Arthur Whitcomb, Inc.**, 725 Main St., Keene, N. H. LB $232,070, constr. 1.439 mi. surf. tr. grav. hy. in Richmond. Bids June 30. CD 6/20.

† **Wexler Constr. Co.**, 118 Needham St., Newton Highlands, Mass. CA $773,340, est. $800,000-$900,000. Special AAA Facilities, Rte. 3A, Turkey Hill Lane and Crocker Lane, Hingham and Cohasset, ENG-19-016-55-163, MASSACHUSETTS. U. S. Eng., 857 Commonwealth Ave., Boston, Mass. CD 6/28, under LB.

▲† **John A. Volpe Constr. Co., Inc.**, 54 Eastern Ave., Malden, Mass. CA $2,311,246, est. $2,300,000. hangar and utility expansion, Naval Air Station, NOY 81092, Spec. 40115, South Weymouth, WEYMOUTH, MASS. First Naval Dist., 495 Summer St., Boston, Mass. CD 6/24, under LB.

† **Pelletier Constr. Co.**, 173 Bailey St., Woonsocket, R. I., CA $810,534, est. $800,000-$900,000. Special AAA Facilities, North Smithfield, ENG-19-016-55-141, RHODE ISLAND. U. S. Eng., 857 Commonwealth Ave., Boston, Mass. Bids June 16. CD 6/13, under LB.

† **Frouge Constr., Inc.**, 141 North Ave., Bridgeport, Conn., CA $794,398, est. $800,000-$900,000, Special AAA Facilities, Westport, ENG-19-016-55-142, CONNECTICUT. U. S. Eng., 857 Commonwealth Ave., Boston, Mass. Bids June 2. CD 6/8, under LB.

† **Frouge Constr. Co., Inc.**, 141 North Ave., Bridgeport, Conn., CA $707,265, est. $800,000. Special AAA Facilities, Milford, ENG-19-016-55-102, CONNECTICUT. U. S. Eng., 857 Commonwealth Ave., Boston, Mass. Bids Apr. 20. CD 4/26, under LB.

▲† **Frouge Constr., Inc.**, 141 North Ave., Bridgeport, Conn., CA $901,213, Lot A, Portland; CA $861,110, Lot C, Simsbury and Bloomfield and Avon; Special AAA Facilities, ENG-19-016-55-123, CONNECTICUT. U. S. Eng., 857 Commonwealth Ave., Boston, Mass. Grand total $2,612,098 Bids June 3. CD 6/7, under LB.;

The Associated Constr. Co., 1010 Wethersfield Ave., Hartford, Conn., CA $849,775, Lot B, Farmington and Plainville (Connecticut).

BUILDINGS—LB & CA

DeMattia & Son, 18 E. Central St., Natick, Mass. CA Approx. $540,000. RESIDENTIAL DEVELOPMENT, "Bayfield", 30 ranch type houses, BEDFORD, MASS. Martin Cerel, 18 E. Central St., Natick, Mass.

J. J. Powers Co., 127 Alewife Brook Parkway, Cambridge, Mass. CA Approx. $432,000, est. $400,000. SUPERMARKET, Popes Hill Section, DORCHESTER, MASS. Elm Farms Foods Co., 600 Columbia Rd., Dorchester, Mass. Sumner Shein, 271 Huntington Ave., Boston, Mass., archt.

▲ **Campanelli Homes, Inc.**, 186 Boden Lane, Natick, Mass. CA Est. $1,500,000. RESIDENTIAL DEVELOPMENT, 100 homes, "Richfield," Beacon, near Rte. 9, FRAMINGHAM, MASS. Martin Cerel, 18 E. Central St., Natick, Mass. CD 2/25.

Puritan Homes, Inc., 18 E. Central St., Natick, Mass. CA Approx. $700,000. RESIDENTIAL DEVELOPMENT, Daymon Farms II, 35 RESIDENCES, WAYLAND, MASS.

City, Justin L. O'Brien, supt. Schools, 169 Church St., New Haven, Conn., rejected bids June 6, Bassett Junior HIGH SCHOOL addn., alterations, LB $695,500, NEW HAVEN, CONN. Will re-advertise. CD 6/13, under LB.

W. J. Megin, Inc., 51 Elm St., Naugatuck, Conn. CA $563,280, est. $550,000. NURSES' HOME, Masonic Ave., WALLINGFORD, CONN. Masonic Home & Hospital, Masonic Ave., Wallingford, Conn. Bids June 11. CD 6/17, under LB.

MIDDLE ATLANTIC

BUILDINGS—BA

▲ **Pa., Phila.**—WAREHOUSE—BA 7/19—General Electric Co., River Rd., Schenectady, N. Y., warehouse, office. $1,500,000. The Ballinger Co., 121 N. Broad St., Phila., archt. CD 5/6.

▲ **N. Y., Bayside**—SCHOOL—BA 8/9—Bd. Educ., City of New York, Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, P.S. 169 northeast corner of 212 St. and 23 Ave., general constr., est. $1,430,000. Plans deposit $30; plumbing and drainage, est. $120,800; heating and ventilating $238,150; electrical and lighting fixtures, est. $200,000. Plans deposit $8 each. CD 1/21.

▲† **D. C., Wash.**—MEDICAL SCHOOL—BA About 8/15—General Services Admin., P. Bldgs. Service, General Services Bldg., exten. and remodel pre-clinical medical bldg., Howard University. L. Justement, 2011 K St., N. W. archt. CD 9/8.

BUILDINGS—SLC

Pa., Washington—SCHOOL—Immaculate Conception R. C. Congregation, Washington, soon lets contract, 3 story, steel, masonry parochial high school, $400,000. Plans deposit $40, Wm. Flynn, 335 Shaw Ave., McKeesport, archt.

HEAVY CONSTRUCTION—LB & CA

▲ **Baldwin-Lima-Hamilton Co.**, Chester Park and Simpson Sts., Eddystone, Phila., Pa. CA $1,458,440. furnishing, del. spillway gates, control gates and stop logs for Long Sault Dam, St. Lawrence Contr. No. P13, NEW YORK. The Power Authority of State of New York, 270 Broadway, New York 7, N. Y. CD 6/27, uner LB;

Canadian Vickers Ltd., Maisonneuve St., Montreal, Que. CA $1,964,850. (2) St. Lawrence Contr. No. P13. (New York), for the Iroquois Dam.

† **F. D. Rich Co., Inc.**, 322 Main St., Stamford, Conn. LB $743,000. (8 bidders) alert hangar and secondary roads, Stewart Air Force Base, ENG-30-075-55-419, NEWBURGH, N. Y. U. S. Eng., 111 E. 16 St., New York 3, N. Y. Bids June 29. CD 6/8.

▲ **PENNSYLVANIA**—Pennsylvania Turnpike Comn., 11 N. 4 St., Harrisburg,

Bethlehem Steel Co., Suburban Station Bldg., Phila., Pa. CA $2,517,674. superstructures of Lehigh River and Pohopoco Creek Bridges, (Sec. 36EF) northeastern extension in Mahoning Twp. and Parryville Boro, Carbon Co. CD 6/10, under LB.

▲ **PENNSYLVANIA**—Pennsylvania Turnpike Comn., 11 N. 4 St., Harrisburg,

Bethlehem Steel Co., E. 3 St., Bethlehem, Pa. LB $1,539,262. combined constr. superstructures of Hawk Falls Bridge (Sec. 37-AB) and Lehigh River Bridge (Sec. 37-AB) and Lehigh River Bridge (Sec. 37-DE), Carbon and Luzerne Counties. Bids June 29. CD 6/7.

† **Dominion Contractors, Inc.**, 100 W. 22 St., Baltimore, Md. CA $606,456. supersonic wind tunnel addn., ENG-18-020-55-63, ABERDEEN PROVING GROUND, MD. U. S. Eng., 24 St. and Maryland Ave., Baltimore, Md. CD 6/23, under LB.

BUILDINGS—LB & CA

▲ **Broadway Park Homes**, c/o Lane Realty, 107-40 Queens Blvd., Forest Hills, N. Y. Owner Builds. $2,000,000. 150 HOUSES on tract at county line road and Soloff Rd., AMITYVILLE, N. Y.

▲ **Babcock & Wilcox**, 161 E. 42 St., New York, N. Y. CA Total est. $60,000,000. design and construct 2.4 million lbs per hr. STEAM BOILER, ASTORIA, N. Y. Consolidated Edison Co., 4 Irving Place, New York, N Y. CD 4/15.

▲ **Karter & Wohl**, c/o Gale-Oppenheimer, 113 W. Sunrise Hy., Freeport, N. Y. Owner Builds. $1,650,000. 110 HOUSES on tract at South St. and Marks Ave. south of Merrick Rd., BELLMORE, N. Y.

▲ **Highcrest-at-Farmingdale Homes**, c/o Lane Realty, 107-40 Queens Blvd., Forest Hills, N. Y. Owner Builds. $2,000,000. 150 HOUSES on tract at Main St. and Frank Ave., FARMINGDALE, N. Y.

▲ **Castagna & Sons, Inc.**, 155-10 Jamaica Ave., Jamaica, N. Y. LB $3,901,026. (8 bidders), general contract for SHELTER for delinquent children (boys) 1221 Spofford Ave., Bronx Boro, NEW YORK, N. Y. Dpt. P. Wks., Municipal Bldg., New York 7, N. Y. Bids June 29, CD 6/23;

Endres Plumbing Corp., 31-65 29 St., Long Island City, N. Y. LB $390,554. plumbing work, (New York, N. Y.);

Raisler Corp., 129 Amsterdam Ave., New York 23, N. Y. LB $461,500. heating and ventilating work, (New York, N. Y.);

Martin Epstein Co., Inc., 227 Lewis Ave., Brooklyn 21, N. Y. LB $588,850. electrical work. (New York, N. Y.).

▲ **Millard Shroder, Inc.**, 369 Lexington Ave., New York 19, N. Y. CA Est. $3,000,000. 21 story OFFICE with full air-conditioning, 121-27 E. 40 St., NEW YORK, N. Y. Senville Realty & Constr., Inc., c/o contractor, Schuman & Lichtenstein, 369 Lexington Ave., New York 17, N. Y., archts.

Morris Manor Homes, c/o Arthur E. Williamson, 484 Rte 17, Paramus, N. J. Owner Builds. $900,000. 100 HOUSES, Rte. 70 near Exit 88, Garden State Parkway, LAKEHURST, N. J.

Willow Estates, c/o John De Palma, archt., 2165 Morris Ave., Unionville, N J. Owner Builds. $400,000. 20 HOUSES, near Summit Rd., MOUNTAINSIDE, N. J.

Daniel J. Cronin, Inc., 717 S. Orange Ave., Newark, N. J., CA $750,000. HIGH SCHOOL, 26-acre tract Grove and Fairview Aves., VERONA, N. J. Bd. Educ., Verona, N. J. Bids June 15. CD 5/31.

Mellon Stuart Co., 210 E. Parkway St., Pittsbugrh,, Pa. CA Est. $500,000. 3 story, bsmnt., steel, brick

(Continued on page 74)

PROJECTS COVERED

By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $44,000; other public works $73,000; industrial buildings $93,000; other buildings, $344,000. Also Foreign projects of $100,000 and more in size of interest to American contractors.

By Regions & Classes of Construction

(In order of Listings)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED
New England
Middle Atlantic
South
Middle West
West of Mississippi
Far West

PROPOSED WORK
Water Supply
Sewers, Waste Disposal
Bridges
Streets & Roads
Earthwork, Waterways
Public Buildings
Mass Housing
Commercial Buildnigs
Industrial Buildnigs
Unclassified

In These Stages

PROPOSED WORK: Before and including appointment of engineers or architects.
BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.
LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.
CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.
CD dates shown are of Construction Daily issue in which last previous report was published.

Symbols and Abbreviations Include:

† Federal Government
▲ Project of $1,000,000 or over.
ENR Engineering News-Record
CD Construction Daily
For additional reports see Construction Daily.

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A. J. Orlando Contracting Co. of Whitestone, New York, won a sub-contract to excavate and move one million yards of earth and rock on the anchor end of the New York Thruway. The job had to be completed before snow and other winter conditions set in—and this meant fast stepping!

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(Continued from page 72)

WING addn., OAKMONT, PA. Presbyterian Home for Aged, Oakmont, Pa. Priss C. Dowler, Century Bldg., Pittsburgh, Pa., archt. CD 6/7, under LB.

▲ **Dick Constr. Co.**, Rte. 51, Large, Pa. CA Est. $30,000,000. PLANTS, WAREHOUSES, OFFICE, Penn-Lincoln Hy., PITTSBURGH, PA. Parkway Terminal Co., (Dick Constr. Co. & Pittsburgh & W.Va R.R.), c/o contractor. Schell, Deeter & Stott, Clark Bldg., and Kuhn & Newcomer, 470 Washington Rd., Pittsburgh, Pa., archts.

▲ **Ramon R. Hedden**, Alden Rd., Nanticoke, Pa. LB $1,245,000. general constr. SENILE PATIENTS BLDG. at Clarks Summit State Hospital, CLARKS SUMMIT, PA. General State Auth., 18 and Herr Sts., Harrisburg, Pa. Bids June 29. CD 6/1.

Dick Corp., Rte. 51, Large, Pa. LB $374,750. 2 story, bsmnt., brick, block McAnulty Elementary SCHOOL, Baldwin Boro, PITTSBURGH, PA. Baldwin Twp. School Dist. Auth., Whitehall, Pa. Bids June 22. CD 6/17.

† **American Constr. Co., Inc.**, 261 Constitution Ave. N. W., Wash., D. C. CA $689,000. addn. of wing, BUILDING 17, National Naval Medical Center, NOY 85509, BETHESDA, MD. Dist. P. Wks. Office, Potomac River Naval Command, Naval Gun Factory, Wash., D. C. Bids June 23, awarded June 24. CD 6/30, under LB.

▲† **Blount Bros. Constr. Co.**, Bell Bldg., Montgomery, Ala. CA $4,194,250. LABORATORY bldg. and air incinerator bldg., ENG-49-080-55-11-(9), CAMP DETRICK, MD. U. S. Eng., First and Douglas Sts. N.W., Wash. 25, D. C. Low bidder withdrew because of error. CD 6/21, under LB.

† **Standard Engineering Co.**, 2129 Eye St. N.W., Wash., D. C. LB $553,670. BLDG. 375 addn., ENG-49-080-55-81 (72), CAMP DETRICK, MD. U. S. Eng., First and Douglas Sts. N.W., Wash. 25, D. C. Bids June 28 CD 6/8.

The Austin Co., 450 W. 1st Ave., Roselle, N. J. CA Est. $570,000. altering present bldg. and constr. 2 story, brick, steel BUILDING addn., WASH., D. C. Kodak Processing Laboratory, 1350 Okie St. N.E., Wash., D. C. W. A. Loumos, 450 W. First Ave., Roselle, N. J., archt.

SOUTH

BUILDINGS—BA

▲ **Ala., Birmingham**—HOUSING—Bids in September—Birmingham Housing Auth., 600 N. 24 St., housing in Avondale Area. $7,500,000. CD 5/23/52.

HEAVY CONSTRUCTION—LB & CA

▲ **NORTH CAROLINA**—State Hy. & P. Wks. Comm., Raleigh,

N. C.—**Dickerson, Inc.**, Box 448, Monroe, N. C., LB $353,502, est. $300,000-$400,000. STBC, sand asph. base and surf., structures 8.2 mi. N. C. 170. Proj. 1724, S-505 (3), S-785 (1), BS 1-6-11-111, Pasquotank Co.; LB $90,813, est. $100,000-$125,000, bit. surf. tr. 32.25 mi. 14 sects. County roads and streets, Proj. No. 7-455, S-636 (2), S-829 (1), S-830 (1), S-831 (1), S-832 (1), S-833 (1), S-834 (1), S-789 (1), BS 10-7-69-42, Code 5900-1014, Code 5900-1015, Code 5900-1029, Union Co.; LB $123,478, est. $125,000-$150,000, CABC, bit. surf. tr. 3.48 mi. Proj. 8-152, S-784 (1), Ashe Co.; LB $123,132, est. $100,000-$125,000. b. conc. surf. Type F-2, 20.36 mi. US 19, 19-A, 441, NC 107 and County Rd., Proj. No. BS 14-6-99-128, BS 14-6-99-129, BS 14-6-99-131, BS 14-6-96-153; BS 14-6-96-154; BS 14-6-96-156, Code 5900-1403, Code 5900-1409, Code 5900-1420, Swain and Jackson Counties; LB $77,194, est. $50,000-$75,000. CABC bit. surf. tr. or sand asph. or b. conc. surf. Type F-2 5.1 mi. county roads, Proj. BS 7-7-50-32, Orange Co.;

N. C.—**Johnson & Geddes**, Box 3217, Fayetteville, N. C. LB $262,859, est. $300,000-$400,000, STBC, b. conc. binder and surf. 8.3 mi. NC 87, Proj. 3455, F-679 (2), Harnett and Cumberland Counties; LB $165,742, est. $175,000-$200,000. STBC. b. conc. binder and surf. Class H & I. 5.11 mi. US-15A. Proj. 6785, F-632 (9), Scotland Co.; LB $172,131, est. $200,000-$225,000. b. conc. binder, surf., Class H & I 16.2 mi. NC 55, Pro BS 6-6-45-154, Code 5900-602, Code 5900-610, Harnett Co;

N. C.—**Barrus Constr. Co.**, Box 395, Kinston, N. C., LB $364,979, est. $400,000-$500,000, CABC, b. conc. binder and surf. 13.535 mi. US 17, Proj. 3664, S. F. 614 (5), Onslow Co.;

N. C.—**Ray D. Lowder, Inc.**, Albemarle, N. C., LB $128,164, est. $100,000-$125,000. CABC, bit. surf. tr. 5.58 mi. County Rd., Proj. 4-208, S-794 (1), Franklin and Nash Counties;

N. C.—**W. E. Graham & Sons**, Box 268, Cleveland, N. C., LB $266,746, est. $300,000-$400,000, grading 7.3 mi. U. S. 421 (reloc.). Proj. 5346 F. I. 712 (1), Forsyth and Guilford Counties;

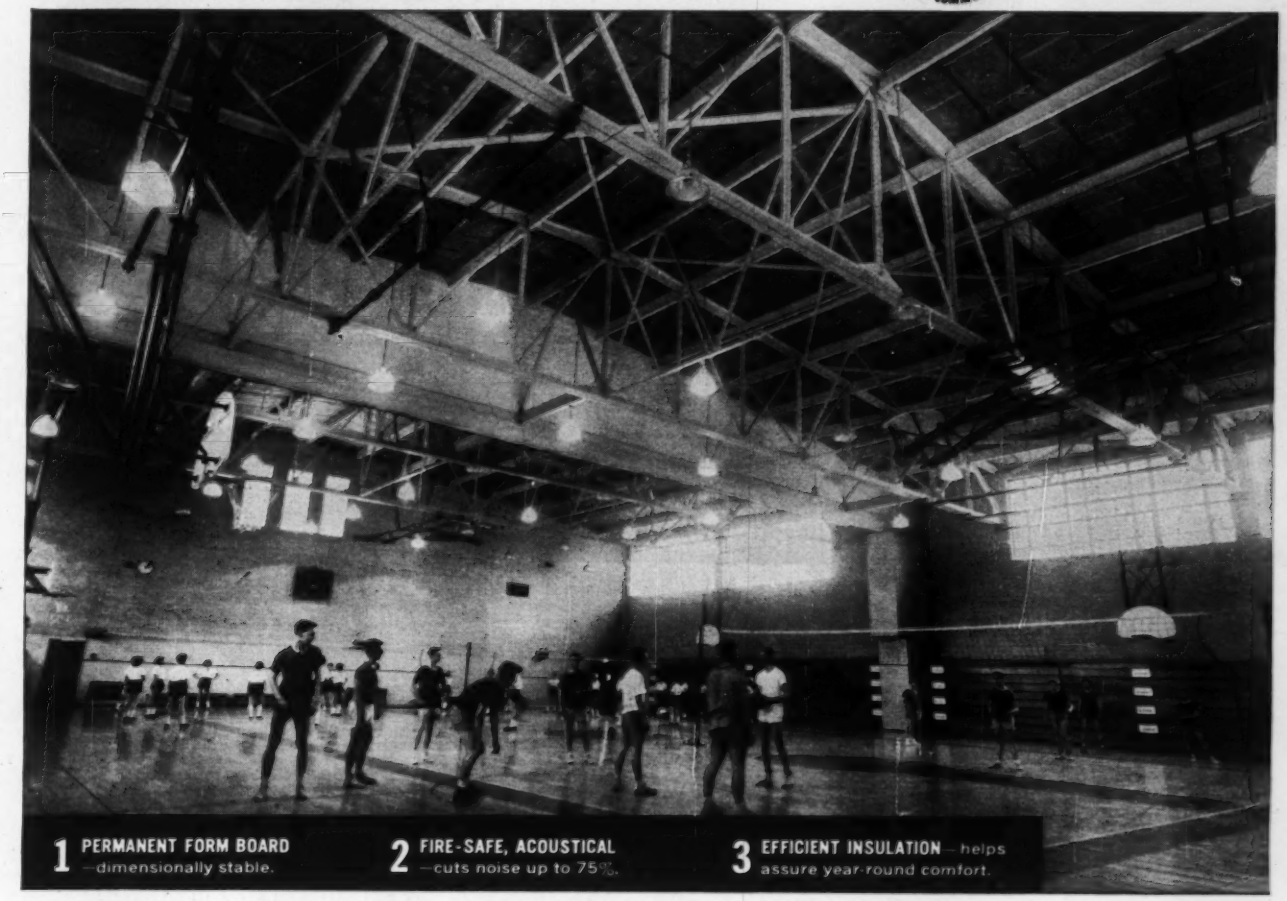
N. C.—**Asheville Contr. Co., Inc.**, Asheville, N. C., LB $437,757, est. $400,000-$500,000, grading 6.32 mi. US 70 (reloc.). Proj. 8182, IN-FI-700 (3), Burke Co.; LB $108,815, est. $125,000-$150,000. CABC, bit. surf. tr. 3.28 mi. County Rd., Proj. 0-203, S-786 (1), Cherokee Co.;

N. C.—**Rea Constr. Co.**, Box 2015, Charlotte, N. C. LB $145,738, est. $150,000-$175,000. b. conc. binder and surf., Class H & I 13.95 mi. NC 7, 18, 161, 273, 274 and US 29, 74 and 74A, Proj. BS 12-6-80-150, BS 12-6-81-164; Code 5900-1218, Code 5900-1229, Code 5900-1202, Code 5900-1213, Code 5900-1227, Code 5900-1206, Code 5900-1201, Cleveland and Gaston Counties., LB $70,877, est. $50,000-$75,000, CABC, bit. surf. tr. or sand asph. or b. conc. surf., Type F-2 6.1 mi. County Rd., Proj. BS 7-7-51-47, Rockingham Co.,

(Continued on page 77)

This Clayton (Mo.) High School Ceiling

Architect — William B. Ittner, Inc., St. Louis; **General Contractor** — E. A. Brunson Construction Company, St. Louis; **Form Board Applicators** — E. R. Lindberg Company, St. Louis.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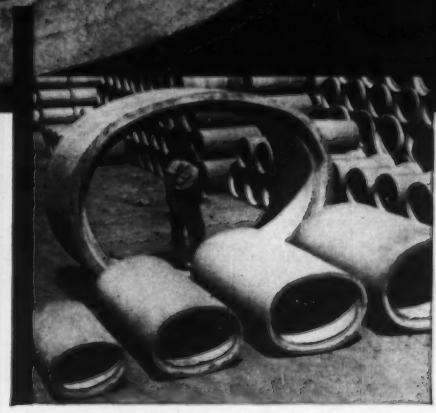

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Lewistown Pipe Company
Universal Concrete Pipe Co.

(Continued from page 74)

N. C.—Blythe Bros. & Co., Box 989, Charlotte, N. C., LB $468,599, est. $400,000-$500,000. b. conc. binder and surf., Class H & I 29.45 mi. NC 16, Proj. BS 12-6-81-163, BS 12-6-83-145, BS 12-6-79-146, Gaston, Lincoln and Catawba Counties, Bids June 28. CD 6/20.

▲† Massman Constr. Co., 1221 Baltimore St., Kansas City, Mo., CA $5,296,393, constr. lock and appurtenances for Warrior Lock and Dam, ALABAMA. U. S. Eng., P. O. Box 1169, Mobile 7, Ala. Bids June 15. CD 6/28, under LB.

† M. T. Reed Constr. Co., 162 Millsaps Ave., Jackson, Miss., CA $671,833, rocket propellant research facilities, Redstone Arsenal, HUNTSVILLE, ALA. U. S. Eng., Grant St., Mobile, Ala. Bids June 20. Awarded June 24. CD 6/29, under LB.

BUILDINGS—LB & CA

▲† Algernon Blair, Inc., 1st. Natl. Bank Bldg., Montgomery, Ala., CA $3,349,000, family HOUSING, ENG-49-080-55-82-(73), FORT BELVOIR, VA. U. S. Eng., First and Douglas Sts. N. W., Wash. 25, D. C. E. Tucker Carlton, 206 E. Cary St., Richmond, Va., archt. Bids June 15. CD 5/20.

Byrum Constr. Co., 12 and Water Sts., Wheeling, W. Va. CA Total est. $500,000. 100x150 ft. PLANT exten. storage and heavy press room fac., WHEELING, W. Va. Sylvania Electric Products, Inc., 1740 Broadway, New York 19, N. Y.

Cecil Chaudior, Box 507, Alexandria, La. CA $514,600. Proj. No. 8-NW-2 for constr. men's DORMITORY for Northwestern State College, NATCHITOCHES, LA. State Bldg. Auth., State Capitol, Baton Rouge, La. Bids June 21, awarded June 22. CD 6/7.

† Farnsworth & Chambers Co., Inc., Box 322, New Orleans, La. CA $996,795. 90-unit HOUSING, NEW ORLEANS, LA. Eighth Naval Dist., Bldg. 16, U. S. Naval Station, Algiers, New Orleans, La. Bids June 3, awarded June 29. CD 6/15, under LB.

▲† Clark Constr. Co., 1919 Parrish Ave., Owensboro, Ky. CA $3,669,517. (10 bidders) HOUSING and utilities, FORT CAMPBELL, KY. U. S. Eng., 306 Federal Office Bldg., Nashville, Tenn. Bids June 21, awarded June 28. CD 6/24, under LB.

MIDDLE WEST

BUILDINGS—BA

▲ Ill., Centralia—HOSPITAL—BA On Or About 8/18—St. Mary's Hospital, Centralia, 4 story, 100-bed hospital, incl. chapel, nurses' home and boiler house. $2,500,000. Maguolo & Quick, 4908 Delmar Blvd., St. Louis, Mo., archts. CD 2/8.

HEAVY CONSTRUCTION—LB & CA

▲ Nichols Engineering & Research Corp., 70 Pine St., New York, N. Y. CA $1,194,254. Contr. No. 5, Millcreek Sewage Works, CINCINNATI, O. City, City Hall, Cincinnati, O. CD 6/3, under LB.

▲ INDIANA—Indiana Toll Road Comn., 309 W. Washington St., Indianapolis, Zone 4,

Bates & Rogers Constr. Corp., 600 W. Jackson St., Chicago, Ill. and J. C. O'Conner & Sons, Inc., 2104 Miner St., Fort Wayne, Ind., CA $6,086,571, constr. 2.5 mi. sect. of Northern Indiana Toll Rd. between Virginia St. and 15 Ave. in Gary, Lake Co. Bids June 22. CD 6/28, under LB.

▲ ILLINOIS—State Div. Hys., Springfield,

O'Connor Constr. Co., 320 Reisch Bldg., Springfield, Ill., CA $1,301,190, c. conc. 3.89 mi. U. S. 66, Madison Co. Bids Apr. 1, awarded June 22. CD 4/6, under LB.

† J. A. Fredman Co., Pontiac, Mich. CA $821,566. AAA Facilities, Detroit vicinity, MICHIGAN. U. S. Eng., 600 E. Jefferson Ave., Detroit 26, Mich. Bids June 7. CD 5/24.

BUILDINGS—LB & CA

Ohio State Constr. Co., 22 E. Gay St., Columbus, O. CA $437,300. general contract GRADE SCHOOL, GIBSONBURG, O. Bd. Educ., Gibsonburg, O. Britsch & Munger, National Bank Bldg., Toledo, O., archts. Awarded June 9. CD 11/8.

▲ Potter-Horn, Inc., 604 Statler Bldg., Boston, Mass. CA Approx. $1,500,000. 100,000 sq. ft. FACTORY, Rte. 20 and Wilbraham St., PALMER, O. Colorado Fuel & Iron Corp., 575 Madison Ave., New York, N. Y.

Bevis & Gilbert, Neeb Rd., Cincinnati, O. Own Forces. $576,000. 36 brick HOMES, first section of home development on Riddle Rd., WOODLAWN, O., O. Nunlist & Frolicher, Traction Bldg., Cincinnati, O. engrs. Awarded June 27.

▲ Grant-Holladay Constr. Co., Calahan Bldg., Dayton, O. Owner Builds. $1,000,000. 151 HOMES in Lincoln Knolls Plat No. 1, near McCartney Rd., YOUNGSTOWN, O.

Hagerman Constr. Corp., 403 Strauss Bldg., Fort Wayne, Ind., CA. Total est. $800,000. general constr. J. E. Obert Grade SCHOOL, GARRETT, IND. Garrett-Keyser-Butler School Bldg. Corp., Garrett, Ind. CD 12/16/53; A. Hattersley & Sons, 212 E. Main St., Fort Wayne, Ind., CA plumbing and heating (Garrett, Ind.).

▲ Tony Ross Co., 5517 Montrose St., Chicago, Ill. Own Forces. $3,000,000. 200 HOMES, ADDISON, ILL.

▲ Rust Engineering Co., 575 6th Ave., Pittsburgh, Pa. CA $1,500,000. design and construct 178,000 sq. ft. corrugated paper case FACTORY, CHICAGO, ILL. Wabash Fibre Box Co., 2000 N. 19 St., Terre Haute, Ind. Awarded June 22.

Quality Constr. Co., 636 E. 71 St., Chicago, Ill. Own Forces. $750,000. 50 HOMES, CHICAGO RIDGE, ILL. Arthur A. Gouvis, 10837 S. Michigan St., Chicago, Ill., archt.

Linbiad Constr. Co., 517 Leach St., Joliet, Ill., LB $401,201. Taft Elementary SCHOOL addn., Pershing

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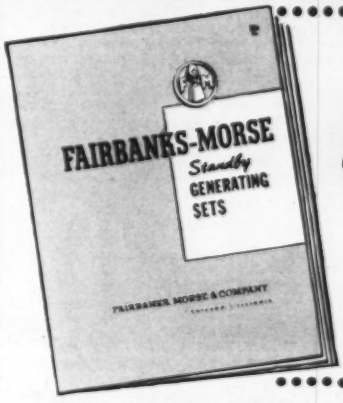

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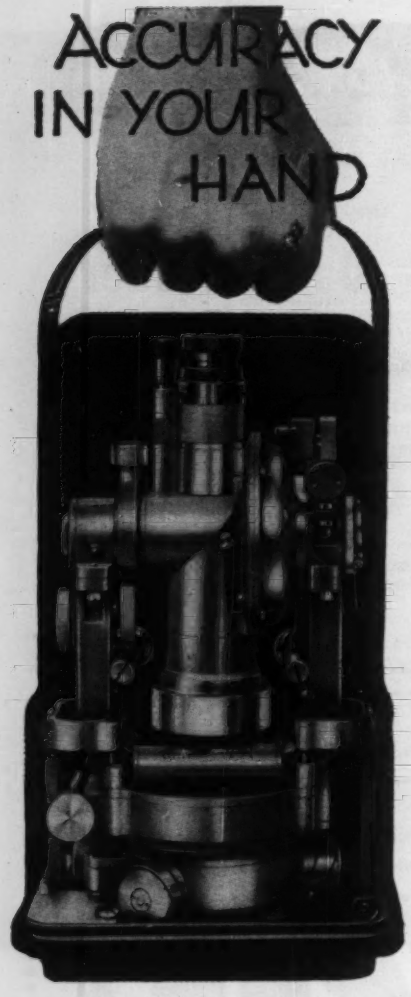

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Elementary SCHOOL addn., Reed-Woods SCHOOL, JOLIET, ILL. School Dist. 86, 153 S. Ottawa St., Joliet, Ill. Bids June 20. CD 6/14.

▲ **Wm. E. Ray & Assocs.**, 77 W. Washington St., Chicago 2, Ill. Own Forces. $1,000,000. 60 HOMES, LOMBARD, ILL.

Leonard M. Gervasio, 5361 Madison St., Chicago, ILL. Own Forces. $500,000. 25 HOMES, LOMBARD, ILL.

Charles Import Co., 10756 Wallace St., Matteson, Ill. Own Forces. $850,000. 44 HOMES, MATTESON, ILL. Arthur Gouvis, 10837 S. Michigan Ave., Chicago, Ill., archt.

Mills & Sons, Inc., 7610 W. Grand St., Elmwood Park, Ill. Own Forces. $750,000. 35 HOMES, NORTHBROOK, ILL.

▲ **Chesterfield Builders**, 3454 Devon St., Chicago, Ill. Own Forces. $7,500,000. 300 HOMES, SKOKIE, ILL. Adam Dzik, 4901 Parker St., Chicago, Ill., archt.

▲ **Admiral Builders Corp.**, 3841 Devon Ave., Chicago, Ill. Own Forces. $2,500,000. 120 HOMES, SKOKIE, ILL.

J. W. Reedy Constr. Co., 8 E. St. Charles Rd., Villa Park, Ill. Own Forces. $950,000. 45 HOMES, VILLA PARK, ILL.

Ward W. Ross, Pontiac, Mich. CA $937,000. general contract JUNIOR HIGH SCHOOL, PONTIAC, MICH. City, Pontiac, Mich. Bids June 7. CD 5/19.

WEST OF MISSISSIPPI

BUILDINGS—BA

† **Colo., Denver**—POWER PLANT—BA 7/19—U. S. Atomic Energy Comn., P. O. Box 2611, Rocky Flats, Denver, atomic power plant expansion, Plant AEC, Bldg. 47 (Inv. No. 292-55-29) incl. constr. industrial type bldg., approx. 19,000 sq. ft. floor space, $900,000. CD 6/13.

Colo., Boulder — SCHOOL — BA 7/20 — Boulder County School Dist., 1440 Walnut St., Casey Junior High School addn., incl. 7 classrooms, addn. gym, shop, and cafeteria facilities, $400,000. Hobart D. Wagener, National State Bank Bldg., engr. and archt. CD 3/14.

Mo., Valley Park — NOVITIATE — BA 7/21 — Foreign Mission Sisters of St. Dominic, Vance Rd., Valley Park and c/o Archdiocesan Bldg. Comn., Rev. James R. Hartnett, exec. secy., 3810 Lindell Blvd., St. Louis, 3 story, brick, masonry, 50,000 sq. ft. novitiate, incl. dormitory, chapel, classrooms, library, etc., Vance Rd. $500,000, Leo A. Daly Co., Ambassador Bldg., 411 N. 7 St., St. Louis, Zone 1, archt. CD 2/3.

Minn., Arlington — SCHOOL — BA 7/27 — Bd. Educ., O. H. Meyer, clk., school addn. $800,000. H. H. Swanson, 500 Sexton Bldg., Minneapolis, archt. CD 1/5.

▲† **Iowa, Council Bluffs**—POST OFFICE—BA About 1/2 General Services Admin., P. Bldgs. Service, Peter A. Strobel, GSA Admin., comr. P. Bldgs., General Services Bldg., Wash. 25, D. C., 1 and 3-story approx. 60,000 sq. ft. post office, 6 St. and Broadway. $1,400,000. Robert C. Robinson, 310 Park Bldg., Council Bluffs, and Brooks-Borg, 815 Hubbell Bldg. Des Moines, archts. CD 5/25.

HEAVY CONSTRUCTION—LB & CA

† **G. J. Johnson & Son Co.**, 848 W. 79 St., Minneapolis, Minn. LB $725,159. administration and training bldg., warehouse, exterior facilities as drainage, access road, water and sewer, services, electric distr. etc., Minneapolis-St. Paul International Airport, MINNEAPOLIS, MINN. U. S. Eng., 1217 U. S. Post Office and Custom House, St. Paul, Minn. Bids June 28. CD 6/9.

Geo. L. Cousins Contg. Co., 875 N. Skinker Blvd., St. Louis 5, Mo. CA Est. $600,000. 1,300-tomb addn. to mausoleum, rein.con., granite, etc., in Oak Grove Cemetery, ST. LOUIS COUNTY, MO. Oak Grove Memorial Mausoleum, 7800 Charles Rock Rd., St. Louis 14, Mo. McDonald Lovell, 7800 St. Charles Rock Rd., St. Louis 14, Mo., archt.

† **S. W. Hardwick Co.**, First State Bank Bldg., Beardstown, Ill., CA $667,175, constr. Bouef River Channel imprvs., Reach BR 5, Mile 196.1 to Mile 220.0 and Reach BR-6, Mile 220.0 to Mile 235.5 along Boeuf River between Mile 196.1 and Mile 235.5 in Chicot Co., from immediately north of Louisiana Arkansas State Line to approx. 500 ft. upstream of Missouri Pacific R.R. approx. 9 mi. northwest of Lake Village, ARKANSAS. U. S. Eng. P. O. Box 60, Vicksburg, Miss. Bids June 21, awarded June 27. CD 5/25.

OKLAHOMA—Oklahoma Turnpike Auth., 321 N.E. 24 St., Oklahoma City, Zone 5,

J. A. Raines Co., 2311 Callahan St., Muskogee, Okla., LB $888,301, est. $795,706, (5 bidders), Contr. 113 approach grading, 4-lane bridge over the Spring River, at Miami, Ottawa Co. Bids June 28. CD 6/1.

▲ **OKLAHOMA**—Oklahoma Turnpike Auth., 321 N. E. 24 St., Oklahoma City, Zone 5,

Okla.—**W. D. Jeffreys Co.**, 4201 Towson Ave., Fort Smith, Ark., LB $673,899, est. $602,102, (6 bidders), Contr. 111, 3.641 mi. grade, drainage, structures, at Chelsea, Rogers Co.;

Okla.—**Amis Constr. Co.**, 1647 Exchange Ave., Oklahoma City, Okla., LB $614,568, est. $614,149 (7 bidders), Contr. 114, grade, drainage, structures 5.833 mi. at Fairland, Ottawa Co.;

Okla.—**J. W. Moorman & Sons**, Box 307, Muskogee, Okla. LB $592,924, est. $693,635, (6 bidders) Contr. 119, grade, drainage, structures, 4.253 mi. at Afton, Craig and Ottawa Counties. Bids June 28. CD 6/1.

▲† **George A. Fuller Co.**, Gibralter Life Bldg., Dallas, Tex., CA $4,961,611, est. $4,900,701, 250-500 bed hospital, Carswell Air Force Base, ENG-41-443-55-123, FORT WORTH, TEX. U. S. Eng., 100 W. Vickery Blvd., Fort Worth, Tex. Bids June 7, awarded June 27. CD 6/9, under LB.

▲ **C. H. Leavell & Co.**, 1900 Wyoming St., El Paso, Tex. CA $2,257,063, 20 m.g. water treatment plant, WYLIE, TEX. Grand total $3,387,043. North Texas Municipal Water Dist., Wylie, Tex. Bids June 7. CD 6/17, under LB.

P. C. Sorenson, 2203 S. Industrial St., Dallas, Tex., CA $890,910, Sec. "A" 36 in. pipe line, Wylie to vicinity Garland; CA $239,070, Sec. "B", 36 in. water line from Garland to Dallas. (Wylie, Tex.).

† **Lovering Constr. Co. and O. J. Eickoff & Sons, Inc.**, 69 W. Kellogg Blvd., St. Paul 2, Minn. LB $607,142, est. $570,486 (2 bidders) 2 story, masonry, wood frame, 9,600 sq. ft. bachelor officers' quarters, 5,100 sq. ft. base operations bldg., 9,300 sq. ft. fire station, 3,900 sq. ft. officers' mess, Glasgow Air Force Base, ENG-45-164-55-35, GLASGOW, MONT. U. S. Eng., City-County Airport, Walla Walla, Wash. Bids June 27. CD 6/8.

BUILDINGS—LB & CA

H. Davis & I. Minter, 8630 W. 29 St., Minneapolis, Minn. CA Approx. $800,000. HOUSING, north of Golden Valley Rd. between Kelly Drive and Hampshire Ave., GOLDEN VALLEY (P. O. MINNEAPOLIS), MINN. Fairview Constr. Co., 8630 W. 29 St., Minneapolis, Minn. J. A. Cooperman, St. Louis Park, Minn., archt.

M. Shapiro & Sons, Inc., 400 Alta Dena Court, University City 5, Mo. Owner Builds. $553,760. 51 addnl., 1 story wood, masonry DWELLINGS, GARAGES, of Reavis Barracks Rd. east of Mackenzie Drive, AFFTON, (ST. LOUIS 23 P.O.), MO.

Sharp Bros., 1014 E. 19 St., Kansas City, Mo. CA $905,520. 2nd part of secondary SCHOOL, U. S. Hy. 24 and Noland Rd., INDEPENDENCE, MO. School Bd., School Bldg., Independence, Mo. Bids June 28. CD 5/9.

▲† **A. J. Aiport Co.**, Title Guarantee Bldg., St. Louis, Mo. CA $3,722,900. alterations, addns. to BUILDINGS and utilities at Veterans Hospital, JEFFERSON BARRACKS, MO. Veterans Admin., Munitions Bldgs., Wash., D. C. Bids June 14, awarded June 30. CD 6-16, under LB.

▲ **Patti Constr. Co.**, 1340 Admiral Blvd., Kansas City, Mo., CA $1,058,301, est. $950,000. men's DORMITORY, KANSAS CITY, MO. University of Kansas City, Dr. Earl McGrath, pres., 5100 Rockhill Rd., Kansas City, Mo. Bids June 28. CD 6/15.

Southern Real Estate & Finance Co. and Delmar Investment Co., 705 Olive St., St. Louis 1, Mo. Separate Contracts. $600,000. remodeling, modernizing 15 story, bsmnt., 705 Olive BUILDING, ST. LOUIS, MO.

Custom Built Homes Co., and Wilshire Land & Inv. Co., 5500 Buena Vista Rd., Kansas City, Kan. (jointly) Owner Builds. $500,000. SHOPPING CENTER, 82 St. and State Ave., KANSAS CITY, KAN.

▲ **Miles Strickland & Akard Beall**, 1508 Fannin St., Houston, Tex., CA $1,037,850 (A) 32 DWELLINGS (C) 36 DWELLINGS (E) 38 DWELLINGS near HOUSTON, TEX. Miles Strickland & Assocs., 1508 Fannin St., Houston, Tex. CD 8/27.

▲ **Winter-Mallette Building Co.**, c/o O. R. Winter, 2406 S. MacGregor St., Houston, Tex., CA $3,750,000. 350-units masonry APARTMENT; CA $1,000,000, 65,000 sq. ft. masonry COMMUNITY CENTER, 20-acre tract on Buffalo Speedway, between Westheimer Rd. and Bissonnet Ave., HOUSTON, TEX. La Fonda-Parkfront Apartments and Center, c/o O. R. Winter, 2480 Times St., Houston, Tex. CD 7/18, under Lamar Gardens Apartments, as owner.

F. R. Ball Co., 4541 Newland, Wheatridge, Colo., LB $723,000, general contract Frances R. Doull Elementary SCHOOL West Harvard Ave., and South Utica St., DENVER, COLO. School Dist. No. 1, 414 14th St., Denver, Colo. Alfred Watts Grant, 1640 Court Pl., Denver, Colo., archt. and engr.

Newstrom-Davis & Co., 200 W. 8th Ave., Denver, Colo., CA $767,000, remodeling City AUDITORIUM, DENVER, COLO. City & Denver Co., City & County Bldg., Denver, Colo. CD 5/3, under LB.

FAR WEST

BUILDINGS—BA

Calif., Los Angeles—BA 7/12—ASSEMBLY—Bd. Educ., 1425 S. San Pedro St., assembly bldg. at Verdugo Hills High School, in Tujunga, $400,000. Vincent Palmer, 3008 Wilshire Blvd., archt. CD 4/8.

Calif., Santa Fe Springs—BA 7/20—Little Lake City School Dist., 10515 Pioneer Blvd., Paddison School. $500,000. Flewelling & Moody, 3112 Los Felz Blvd., Los Angeles, archts.

Nev., Reno—SCHOOL—BA 8/16—Reno School Dist., Babcock Bldg., E. Otis Vaughn Intermediate School. $750,000. Plans deposit $25. Ferris & Erskine, 777 LaRue St., archts. CD 12/1.

BUILDINGS—SLC

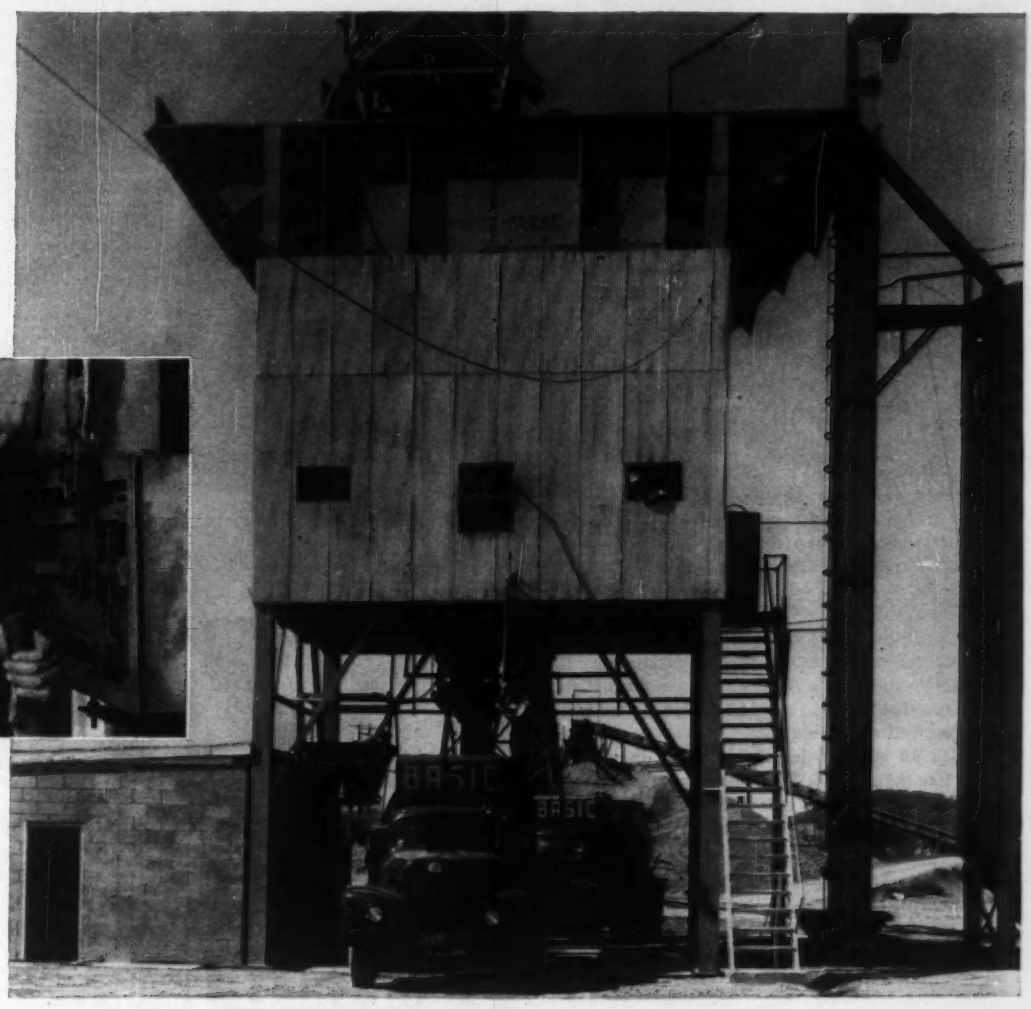
Calif., Oakland—CHURCH—Lakeshore Baptist Church, c/o Corlett & Anderson, archts., Bank of America Bldg., soon lets contract church and educational unit, Lakeshore Ave. $500,000. CD 7/3/48.

HEAVY CONSTRUCTION—LB & CA

† **Richards & Assocs.**, Carrollton, Ga., LB $627,303, est. $590,691, Palisades-Goshen, 115-kilovolt transmission lines, Palisades Proj., Spec. DC 4431, IDAHO. Bureau Reclamation, Dpt. Interior, Palisades, Idaho. Bids June 23. CD 5/18.

(Continued on page 80)

OHIO PLANT CUTS BATCHING TIME 20% WITH ERIE STRAYER TRUCK MIXERS



Just one man operates the Erie Truck Mixer Plant at Basic Construction Materials' Sargents plant. An Erie feature that cuts costs and boosts profits. Sold by Cantwell Machinery Company, Columbus, Ohio.

Busy Basic Construction Materials opened a plant at Circleville, Ohio in 1948. They bought their first Erie Strayer Truck Mixer Plant in 1949. Three years later, they had a second plant in operation at Sargents, Ohio. Now they are volume producers of building materials, including specification concrete for ready-mix trucks.

Here's what they say about their Erie Strayer Truck Mixer Plants.

"Naturally high production with minimum maintenance are basic essentials in our operation. That's why we bought our second Erie Strayer Plant. Experience with our Circleville plant assured us Erie Strayer had both.

"Our plants service many high production jobs. They have supplied ready mix concrete for 4-lane highway, U. S. Route 23, and critical emergency pours for an atomic energy plant. Production of over 200 yards per hour was required. Our Erie Strayer equipment made it easy.

"We estimate the Erie cuts batching time 20% over the plant we first used. Maintenance is negligible."

Hundreds of our customers have had similar experiences.

Here's why:

1. Precision AggreMeter for weighing and mixing specification concrete.
2. Welded sections. Can be assembled in eight hours. Knock down just as fast. Parts can be handled easily on a low-boy trailer.
3. Built to last—but with all standard parts for easy replacement.

For literature, write Dept. R-75
Cable Address: EXIMPORT

ERIE STRAYER COMPANY

275 GEIST RD. ERIE, PENNSYLVANIA

No clutter or confusion at paving site. Premixed concrete delivered by Dumpcretes ready for placing.

PAVING ON THE OHIO TURNPIKE

Non-agitated Hauling Meets Every Test

On sections C-2 and C-3 of the Ohio Turnpike there's no clutter at the paving site. No paver, no water trucks, no men to run them.

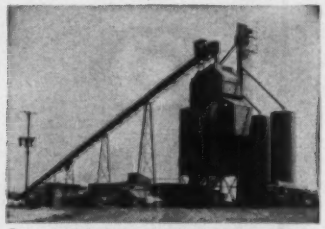
Just spreaders and finishers, plus a Dumpcrete or two discharging 4 yards of premixed concrete in 60 seconds.

The automatic central mixing plant is midway on the 10-mile job. Three men run it. 14 Dumpcretes haul its 95,000 yd. production.

Here's the bonus. The single plant supplies concrete for bridges, culverts, walls and widening as well as paving.

"It's an efficient, high-production operation. We like it," says D. W. Winkelman, contractor.

This method cuts costs on small jobs, too. It's approved by 25 state highway departments. Write for bulletins today.



Central mixing plant located midway on job.

Slump, cylinder, beam and air test (above) all O.K.

Manufacturing Division, Maxon Construction Co., Inc.
710 Talbott Building, Dayton 2, Ohio

Send Me ☐ Paving on the Ohio Turnpike ☐ 8 Ways to Set Up For Central Mixing

Name_____

Firm_____

Street_____

City_____

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Fastest from plant to pour

Goldblatt

"jitterbug" cement tamper

$15.75 F.O.B. Kansas City, Mo.

Tamps down heavier aggregate, leaves lighter material on top. Made of heavy-gauge steel for long life. Round holes in 6" x 48" tamping grill for less splash and easier cleaning. Lightweight, only 17 lbs. Four easily removed screws permit fast knockdown. Rubber grip handles. Order No. T46. Send check, money order. Fully guaranteed.

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NEW IMPROVED DESIGN!

GOLDBLATT TOOL COMPANY, Dept. F-7
1928 Walnut, Kansas City 8, Mo.

1,056 tools

(Continued from page 78)

Ernest C. Collins, 420 Weber St., Compton, Calif. LB $430,316, North Side Water transmission main, FALLBROOK, CALIF. Rainbow Municipal Water Dist., 124½ S. Main St., Fallbrook, Calif. Boyle Eng. Co., 3913 Ohio St., San Diego 4, Calif., engr. Bids June 20.

Milosevich & Zarubica Constr. Co., 1419 Petrero Ave., El Monte, Calif., LB $444,305, Proj. 156, Harvard St., Wilson Ave., Upper Central Ave. and Upper Glendale Ave., Storm Drains, GLENDALE, CALIF., County Flood Control Dist., 2250 Alcazar St., Los Angeles, Calif. Bids June 24. CD 6/3.

† Trepti Constr. Co., 2001 Ketner Blvd., San Diego, Calif., LB $723,446, extend Bldg. 379 at N.A.S. North Island, NOY 86708, Spec. 45819, SAN DIEGO, CALIF. Dpt. Navy, Eleventh Naval Dist., San Diego, Calif. Bids June 22. CD 6/6.

BUILDINGS—LB & CA

Dan Davis & Co., 2838 N.E. Hamblett St., Portland, Ore. Day Labor. $850,000. 110,000 sq. ft. rein.-con. WAREHOUSE, YAKIMA, WASH. Associated Grocers, Inc., 3301 Norfolk St., Seattle, lessee. CD 6/29.

▲ Mortex Constr. Co., 7700 Sunset Blvd., Los Angeles, Calif. Owner Builds, $1,776,300, 182 DWELLINGS. Placid Dr., Busby Dr., Saranac Dr., Alelad Ave., BELLFLOWER, CALIF. Hudson & Brockow, 2824 W. Olympic St., Los Angeles, Calif., archts.

Louis C Dunn, Inc., 681 Market St., San Francisco, Calif. LB $545,737 (9 bidders) 4 story rein.-con. HOSPITAL addn., BERKELEY, CALIF. Herrick Memorial Hospital, 2001 Dwight Way, Berkeley, Calif. CD 5/14/52.

▲ F. C. Von Guenthuer, 61 Moraga Hy., Orinda, Calif., Owner Builds $2,130,000, 60 HOMES Subdivision, near DANVILLE, CALIF.

† Barnhard Constr. Co., 785 Walsh Ave., Santa Clara, Calif., LB $417,212. (2 bidders) Engineer Field maintenance shop and hardstand, ENG-55-528, FORT ORD, CALIF., U. S. Eng., 180 New Montgomery St., San Francisco, Calif.

Western States Constr. Corp., 1229 S. La Brea Ave., Los Angeles, Calif., CA $757,450, 77 DWELLINGS, Ave. H-8, Ave. H-9, Fig Ave., Ave. H-10, LANCASTER, CALIF., Sierra Estates, 1224 S. Brea Ave., Los Angeles, Calif.

Ecker Bros., 122 Gertrude Ct., Pasadena, Calif., CA $750,000. rein.-con. ELECTRONICS PLANT, PASADENA, CALIF., Consolidated Eng. Co., 300 N. Sierra Madre Villa Ave., Pasadena, Calif. Wilton, Becket & Assoc., 5657 Wilshire Blvd., Los Angeles, Calif., archt.

Paul W. Speir, Inc., 3425 Cahuenga Blvd., Los Angeles, Calif., LB $557,800, Benjamin Franklin Elementary SCHOOL, Altadena, PASADENA, CALIF. Bd. Educ., 351 S. Hudson Ave., Pasadena, Calif. Culver Heaton, 259 S. Los Robles St., Pasadena, Calif., archt. Kolesos & Kariotis, 259 S. Los Robles St., Pasadena, Calif., engrs. Bids June 21.

▲† L. D. Richardson & Co., 9437 Santa Monica Blvd., Los Angeles, Calif., CA $1,156,419, two dehumidfied WAREHOUSES, Scheme No. 2, NOY 86700, Spec. 45811, PORT HUENEME, CALIF. Dpt. Navy, 11th Naval Dist., San Diego, Calif. Bids June 22. Awarded June 27.

Centex Dev. Co., Box 301 Cupertino, Calif., Owner Builds. $807,000, 95 HOMES Subdivision, SAN JOSE, CALIF.

▲ Joseph Filippo, 32 Woodland Ave., San Rafael, Calif., Owner Builds. $2,500,000, 140 home sub-division, near SAN RAFAEL, CALIF. Frank Aitken, 255 Corte Madera Ave., Corte Madera, Calif., engr.

J. D. O'Conner, 106 Grove St., Corte Madera, Calif., CA $500,000. SHOPPING CENTER, SANTA VENETIA, CALIF., Jonwil Co., c/o Hammond & Woodbury, archts., 520 Third St., San Rafael, Calif. Ivan Nelidov, 525 Market St., San Francisco, Calif., engr.

CANADA

BUILDINGS—BA

▲ Ont., Cornwall—OFFICE—BA 7/26—St. Lawrence Seaway Auth., 1225 No. 2 Temporary Bldg., Ottawa, Ont., 8-story steel frame office. $1,000,000. Plans deposit $100. Gordon S. Adamson & Assoc., 52 St. Clair Ave E., Toronto, archts.

▲ N. B., St. John—HOSPITAL—BA 7/27—St. Joseph's Hospital, 116 Cobourg St., 4-9 story irregular shape hospital with three wings and chapel wing, rein.-con. frame to third floor, steel frame above third floor. $3,000,000. Plans deposit $50. Gowan, Ferguson, Lindsay, Kaminker, Langley & Keenleyside, 10 Price St., Toronto, Ont. archts. CD 3/30.

BUILDINGS—SLC

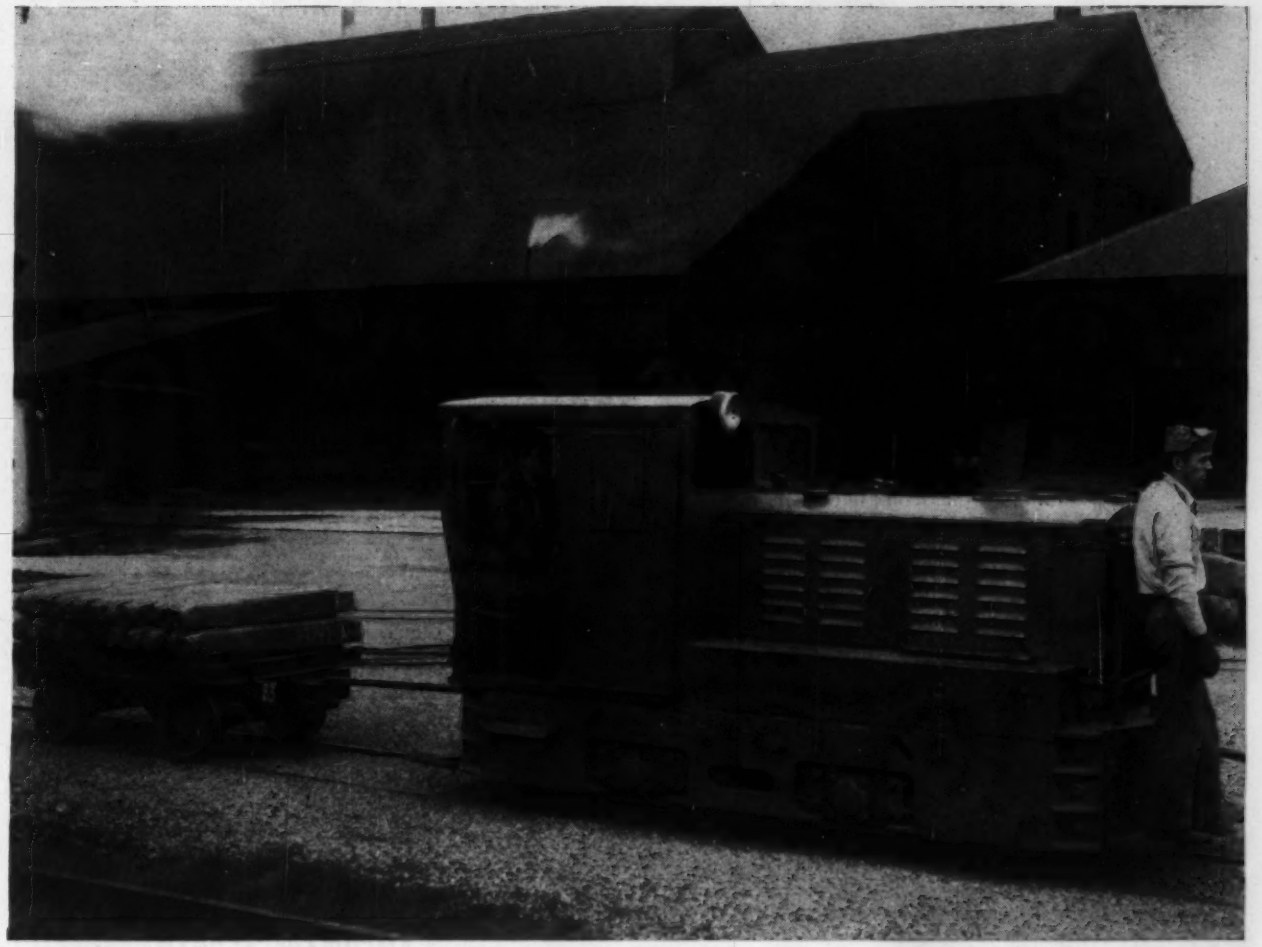
▲ Que., Montreal—RELIGIOUS HOME—Little Sisters of the Poor, 1035 Des Seigneurs St., soon lets contract 4 story bsmnt., E-shaped, 206x225 ft. rein.-con. fdn. and frame religious order's home. $1,000,000. Edgar Courchesne, 3057 Lacombe Ave., archt., Leblanc & Montpetit, 515 Demontigny St. E., engrs.

HEAVY CONSTRUCTION—LB & CA

▲ Byers Constr. Co. Ltd., 5675 Western Ave., Montreal, Que., CA $2,050,524, Central HEATING PLANT, Canadian Army Base, Camp Gagetown, FREDERICTON, N. B. Defence Constr. Ltd., 56 Lyon St., Ottawa, Ont. (Correction—contractor). CD 6/7, under CA.

▲ Diamond Constr. Co., 60 Carleton St., Fredericton, N. B. CA $3,342,326 (10 bidders) road base, underdrains, catch basins, storm and sanitary sewage collection sys., water distr. sys., sewage lift station in New Canadian Army Camp, Gagetown, FREDERICTON, N. B. Defence Constr. (1951) Ltd., 56 Lyon St.,

(Continued on page 82)



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"Besides eliminating repair costs during the four years we have operated the Torqomotive, we have spent an average of only six hours a month for routine maintenance. Starts and stops—and we have plenty of them—are much smoother now, and our operators like the ease with which they can switch and spot the cars."

Yard work is hard work—but just one of the many jobs a Plymouth handles with ease. Whatever your hauling, switching or spotting problems, there's an answer in Plymouth's dependable, cost-cutting performance. Models range from 3 to 70 tons. Gasoline or Diesel, mechanical or Torqomotive Drive.* Also Diesel-Electrics.

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*TORQOMOTIVE DRIVE: Plymouth Transmission coupled to a Hydraulic Torque-Converter

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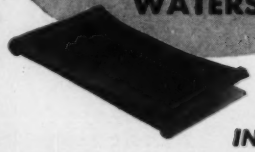
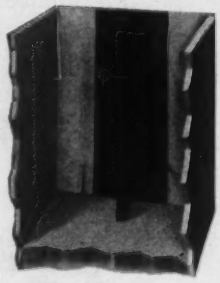
Servicised
SPLIT DUMBELL
TYPE
WATERSTOP



FASTER INSTALLATION
ELIMINATES SPLIT BULKHEADING



Servicised Split Type Waterstop spread open and nailed to the inside of the bulkhead. This eliminates slotting — saves time and labor.

Write for special Waterstop Circular

Split Type Waterstop has one-half of its width split to permit fastening to inside of bulkhead in form of a "T". Eliminates slotting or split bulkheads — saves time, labor, material. After section is poured, bulkhead is stripped and divided sections are joined together with rubber cement or by stapling. Available in 6" or 9" widths in Rubber, Neoprene, Natural Rubber or Geon Polyvinyl.

SERVICISED PRODUCTS CORPORATION
6031 W. 65th ST., CHICAGO 38, ILL.

(Continued from page 80)

Ottawa, Ont. Wiggs, Walford, Frost & Lindsay, 4350 Sherbrooke St. W., Montreal, Que., engrs. Awarded June 27.

▲ **ONTARIO**—Dpt. Hys., Parliament Bldgs., Toronto, Ont.—**Brennan Paving Co. Ltd.**, 400 Gage Ave. N., Hamilton, Ont., LB $85,080, road resurf. Hy. 27 from Wye Bridge to Elmvale, Contr. 55-430.

Ont.—**Gurney Constr. Co. Ltd.**, R.R. 4, Brantford, Ont. LB $239,199 (15 bidders), grading, culverts, granular base Hy. 41, Mackavoy Lake to Klipecker Cr. Contr. 55-91.

Ont.—**McHaffie-Birge Constr. Co.**, Box 275, North Bay, Ont., LB $322,052 (2 bidders), grading, culverts, granular base, Hy. 11, Trout Creek to Powassan, Contr. 55-92.

Ont.—**McNamara Constr. Co. Ltd.**, 42 Industrial St., Leaside, Ont., LB $464,132 (8 bidders) grading, culverts, granular base for Trans-Canada Hy., from Ashton Station to intersection Hys. 15 and 29, Contr. 55-90. CD 4/27/44.

Eastern Canada Constr. Co., Regd., Parc Ste. Foy, Ste. Foy, Que., CA $500,000. trunk sewer, STE. FOY, QUE. City, City Hall, Ste. Foy, Que. Louis Couture, city engr. Awarded June 20. CD 10/20/53.

BUILDINGS—LB & CA

▲ **Ecomony Home Builders**, 1325 Grand Marais Ave. W., Windsor, Ont. Owner Builds. $4,000,000. 365 HOMES, Huntington Park Survey on Ottawa St., HAMILTON, ONT. CD 7/1.

▲ **Piggott Constr. Co.**, Piggott Bldg., Hamilton, Ont. CA Est. $2,000,000. 7 story bsmnt., 123x125 ft. steel, glass, Indiana limestone OFFICE, LONDON, ONT. Syndicate, c/o A. E. Shepherd, 116 Dundas St., London, Ont., Watt & Tillmann 343 Richmond Sts., London, Ont. archts. Awarded June 28.

Anderson-Smythe, Ltd., 154 Merton St., Toronto, Ont. LB $681,900, North Toronto COLLEGIATE addn., brick walls, steel frame, TORONTO, ONT. Bd. Educ., 155 College St., Toronto, Ont. Bids June 23. CD 6/8.

ALASKA

HEAVY CONSTRUCTION—LB & CA

▲† **B-E-C-K Constructors, Inc.**, 3647 Stone Way, Seattle 3, Wash., CA $1,346,602, constr. and rehabilitation utilidors, Inv. 55-89, Elelson Air Force Base, ALASKA. U. S. Eng., Anchorage, Alaska. Bids May 13. CD 5/18, under LB.

▲† **Gaasland Co., Inc.**, 1155 Ellis St., Bellingham, Wash. LB $845,350, est. $558,201 (4 bidders) military installation at Sparrevohn, 2-tower and foundations for third budg., utilities, etc. Inv. 55-79; LB $845,250, est. $535,960 (4 bidders) 2 towers and foundations for third bldgs., utilities, etc. Schedule 2, Inv. 55-79 at Indian Mountain, ALASKA. U. S. Eng., Anchorage, Alaska. Bids June 28.

† **McLaughlin, Inc.**, Ford Bldg., Great Falls, Mont. LB $745,834, est. $449,557 (2 bidders) clearing, grubbing, grading, drainage, surf. 3.5 mi. road, Inv. 55-87, HAINES, ALASKA. U. S. Eng., Anchorage, Alaska. Bids June 28. CD 6/13.

AMERICANS ABROAD

HEAVY CONSTRUCTION—BA

▲ Bids will be taken on the following project under International competitive bidding of NATO.

ITALY

Ministero Difesa Aeronautica, Direzione General Domanio, Ufficio Studi, Viale Castro Pretorio, Rome, construction of buildings (complete with plumbing, lighting and heating), sewerage and roads for air base at Practicz Di Mare. $1,040,000.

HEAVY CONSTRUCTION—LB & CA

▲ **Raymond Concrete Pile Co.**, 140 Cedar St., New York 6, N. Y., U. S. A.. CA $7,500,000. Total est. $22,000,000. constr. approx. 200 mi. standard American type 42-ft. hot mixed surf. hy. with 8 ft. shoulders, necessary bridges between Sari Buri, 75 mi. from Bangkok to the northeastern provinces of Thailand, THAILAND, Thal. Govt., Bangkok, Thailand. Sverdrup & Parcel, Inc., Syndicate Trust Bldg., 915 Olive St., St. Louis 1, Mo., U. S. A., engr.

PROPOSED PROJECTS

WATER SUPPLY

▲ **Ill., Effingham**—Effingham Water Auth., Effingham water storage reservoir of some 760 acres of Blue Point creek west of here, $1,200,000. CD 10/19/53.

Okla., Okmulgee—City WW and main extens. $500,000. Black & Veatch, 4706 Broadway, Kansas City, Mo. consult. engrs. CD 3/23.

▲ **Tex., Lubbock**—City, Steve Matthews, mgr., dam and reservoir for domestic water supply, $1,750,000; water storage inside city limits, $150,000; water main, $200,000. Parkhill, Smith & Cooper, Gibson Bldg., consult. engrs. CD 7/24/52.

▲ **Ont., Toronto**—Municipality of Metropolitan Toronto, 67 Adelaide St. E., reservoir and pumping station, Victoria Park and Eglinton Aves., working capacity, 25 m.g. $1,500,000. Gore & Storrie, Ltd., 1130 Bay St., and Proctor, Redfern & Laughlin, 11 Jordan St., consult. engrs. CD 2/2/50.

SEWERS, WASTE DISPOSAL

▲ **O., Akron**—Comrs. Summit Co., Courthouse, water and sewerage systems for Coventry, Springfield and Copley Twps. $5,000,000-$10,000,000. Chester Engineers, 210 E. Park Wy., Pittsburgh, Pa., consult. engrs. preliminary surveys. Leslie Wolfe, Courthouse, co. engr.

(Continued on page 84)

Your appropriation dollars will go further when you design your bridges for reinforced concrete. And, this flexible medium permits a more imaginative approach to bridge design. Bridges with bold, dramatic lines and shadow . . . bridges with soaring curves and a light, airy touch . . . both are possible with reinforced concrete.

Structures built with reinforced concrete are rugged, too . . . highly resistant to wind, shock, and quake. They are more weather resistant, and require less maintenance. Furthermore, materials and labor are readily available from local sources.

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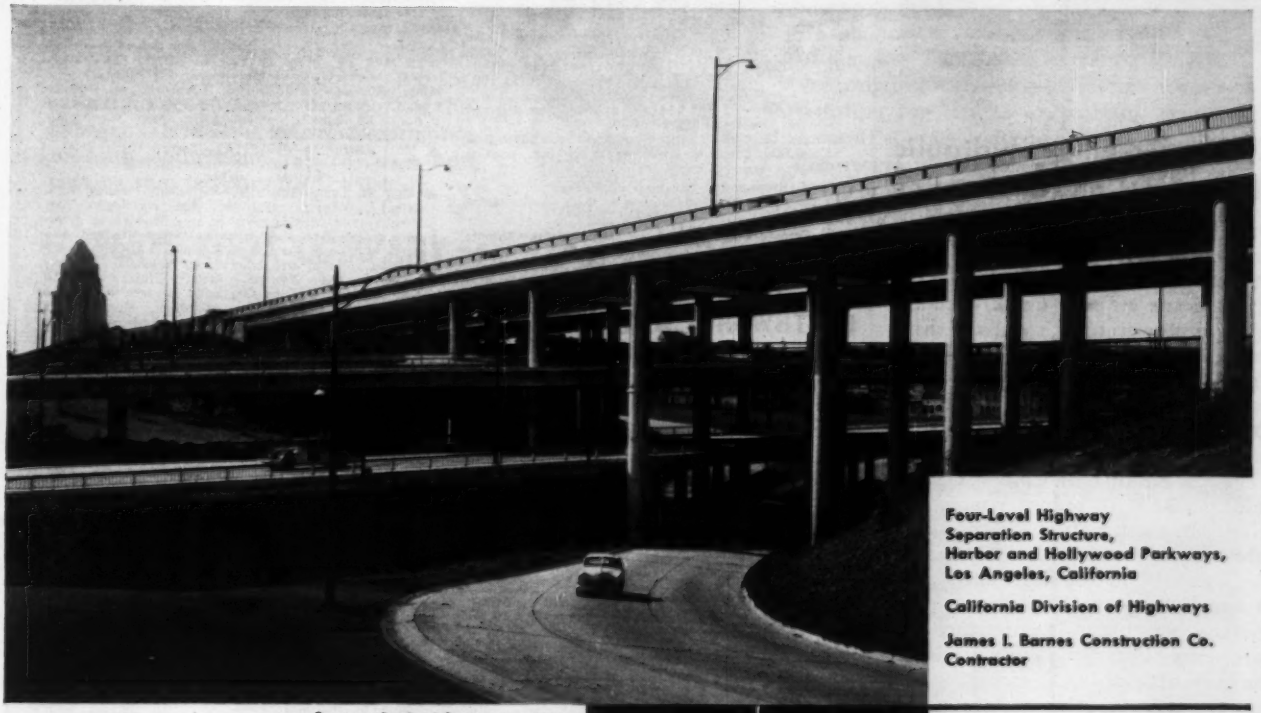

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California Division of Highways

James I. Barnes Construction Co. Contractor

Courtesy, Portland Cement Association

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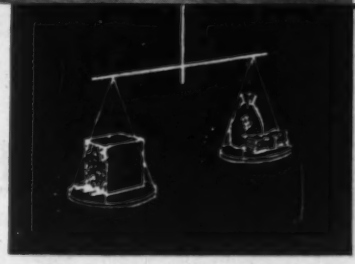

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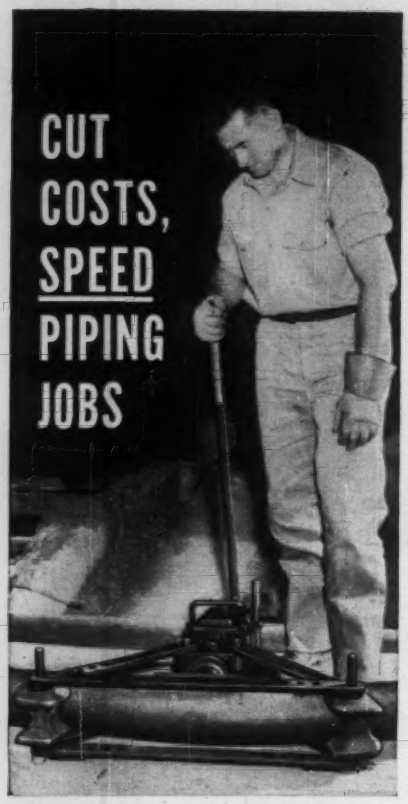

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GREENLEE

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2227 Columbia Ave., Rockford, Illinois

(Continued from page 82)

Pa., Titusville—Municipal Auth., City Hall, sewage plant, $615,000-$685,000. Chester Engineers, 210 E. Park Way, Pittsburgh, consult. engrs. To go ahead about Dec. CD 2/26/51.

Ont., Arva—London Twp. Council, Reeve Howard Elson, Arva, sewage treatment plant and sanitary sewers for north section of township. $700,000. R. C. Dunn, London Twp. Offices, Arvia via London, P.O., engr. CD 5/21/53.

▲ Ont., Toronto—Municipality of Metropolitan Toronto, 67 Adelaide St. E., imprv. Black Creek to provide a proper flow for new 9-foot storm sewer, tripling Black Creek's present flow. $3,800,000. L. B. Allan, comr. Works. CD 8/10/44.

BRIDGES

▲ Mo., St. Louis—City, Frank J. McDevitt, pres., Bd. P. Service, 304 City Hall, 12 and Market Sts., Zone 3, viaduct on Spring Ave. to span railroad tracks in Mill Creek Valley south of Market St., $1,000,000. W. Creceilus, city engr. CD 5/31.

Ont., London—City Council, Mayor, Geo. Beedle and Canadian Pacific Ry., K. Rowntree, div. engr., London, overpass over C.P.R. tracks at Highbury Ave., $150,000. Eric Skelton, City Hall, city engr.

STREETS AND ROADS

▲ MICHIGAN—State Hy. Dpt., Charles M. Ziegler, comr., T. Mason Bldg., Lansing,

Charlevoix Co.—First Priority Superhwy. projects, US-27 10 mi. from Charlotte Northeast, $2,500,000.

Clinton Co.—US-27, 22 mi. from St. John's to Ithaca, $4,200,000.

Genesee Co.—US-23, 34 mi. from Fenton north of Clio, $18,500,000.

Jackson Co.—US-12, 16 mi. Jackson north belt, $1,800,000.

US-127, 25 mi. from Jackson nw. of Mason, $8,000,000.

Kent Co.—US-131, 19 mi. from Wayland north to Grand Rapids, $9,500,000.

US-16, 11 mi. from west Kent Co. line to w. of Coopersville, $3,300,000.

Muskegon Co.—US-16, 6 mi. Norton-Glade, Muskegon and south, $1,800,000.

Ottawa Co.—US-31, 11 mi. from Holland to W. Olive, $700,000, and 4 mi. in Grand Haven and south, $2,700,000.

M-21, 7 mi. from Holland to east of Zeeland, $1,100,000.

St. Joseph Co.—US-131, 14 mi. paving Three Rivers to north of Schoolcraft, $2,600,000.

Washtenaw Co.—US-12, 12 mi. on Ann Arbor South Belt, $3,600,000. Carlos A. Weber, State Hy. Dpt., Lansing, Mich., ch. engr.

▲ Tex., Brownsville—Cameron Co., Brownsville, bond election July 23, 200 mi. rural roads, asph. paving, $2,900,000.

Ont., Toronto—Municipality of Metropolitan Toronto, 67 Adelaide St. E., highway interchange at Eglinton and Victoria Park Aves., incl. traffic islands, special left-turn lanes, special traffic signals and other imprvs. $710,000. CD 1/23/53.

EARTHWORK, WATERWAYS

▲† Illinois—U. S. Eng., 520 Merchandise Mart, Chicago, Zone 54, Calumet-Sag Channel, widening Cal-Sag Channel from 60 to 220 ft., incl. Grand Calumet River from mouth to Clark St. in Gary. $4,000,000. CD 5/17/44.

▲ Ohio—Ohio Dpt. Natural Resources, Columbus, reclaim 434 acres under water at Maumee Bay, dredging, riprap installations, shore protection, and providing small boat and yacht mooring basins, Park facilities. $1,252,500. CD 5/24/51.

AIRPORTS

Fla., Miami—SHOP—Eastern Air Lines, Miami International Airport, Miami, 16,800 sq. ft. shop, International Airport, $500,000.

▲† N. Y., Plattsburgh—HOSPITAL—BA 8/4—U. S. Eng., 111 E. 16 St., New York, Zone 3, hospital, Plattsburgh Air Force Base, ENG-290. $2,000,000-$2,500,000. CD 6/20.

Ont., Timmins—RUNWAY—Dpt. Transport, Hunter Bldg., Ottawa, a second 5,000 ft. runway for Timmins Airport, $550,000.

LATIN AMERICA

▲ Ecuador, Cuenca—PLANT—L. Albert & Son, 258 Kenmar St., Akron, O., U. S. A. (Div. of Bellanca Aircraft Corp., New Castle, Del., U. S. A.), plans tire plant, $1,500,000.

PUBLIC BUILDINGS

▲ Conn., Mansfield—SCHOOL—State P. Wks. Comr., State Office Bldg., Hartford, secondary school to be operated by University of Connecticut, $1,500,000.

Idaho, Idaho Falls—HIGH SCHOOL—Bonneville School Dist. 93, Louis L. Wolz, supt., Idaho Falls, plans by Charles A. Sundberg & Assocs., Salisbury Bldg., high school and remodeling and addns. to 5 other schools. $725,000. CD 12/23.

Ill., Des Plaines—SCHOOL—School Dist. 62, Thacker and Center Sts., plans by Cone & Dornbusch, 100 N. LaSalle St., Chicago, Zone 2, elementary school. $525,000. CD 2/8/51.

▲ Ill., East St. Louis—HIGH SCHOOL—East St. Louis School Dist. No. 189, Bd. Educ., Edwin Barmann, pres., 240 N. 6 St., plans by Charles B. Spencer, Chemical Bldg., 721 Olive St., St. Louis 1, Mo., 2 story brick, masonry, steel, concrete high school, 51 and State Sts. $4,000,000. CD 5/6/54.

Ill., Savanna — HIGH SCHOOL — Bd. Educ., Savanna, voted $750,000 bond, high school. $700,000. Haarstick, Lundgren & Assocs., N. 212 First Natl. Bank Bldg., St. Paul, Minn., archts.

▲ Ind., Fort Wayne—STATE SCHOOL—Indiana Dir. P. Wks. & Supply, State House, Indianapolis, dormitory, $855,000; cold storage bldg. $61,000; new terrazzo floors, $105,000, new bathrooms, $37,500; coal-handling equip., $28,000. mix repairs and rehabilitation, at Fort Wayne State School. Total est. $1,172,192.

▲ Ind., Indianapolis—HOSPITAL—Indiana Dir. P. Wks. & Supply, State House, acute intensive treatment bldg., powerhouse addn., rehabilitation of diet areas and kitchens, Central State Hospital $1,486,077. CD 7/14/53.

▲ Ind., Richmond—HOSPITAL—Indiana Dir. P. Wks. & Supply, State House, Indianapolis, powerhouse, rehabilitation ward bldgs., employees' cafeteria addn., 3 doctors' homes, new laundry and stores, renovate admin. bldg., Richmond State Hospital, $1,788,633.

Iowa, Ames—DUPLEXES—State Bd. Educ., State Office Bldg., Des Moines, duplexes for married students, Iowa State College. $650,000.

▲ Iowa, Cedar Rapids—SCHOOL—Bd. Educ., 346 2 Ave. S. W., plans by L. A. Daly Co., Insurance Bldg., Omaha, Neb., West Side high school and East Side high school. $5,950,000. Bids about July 15. CD 6/9.

Ky., Morehead—STUDENT UNION—State Bldg. Comn., Frankfort, plans by Joseph & Joseph, Speed Blvd., Louisville, Student Union Bldg. at Morehead State College, $650,000.

Mass., Boston—ARMORY—State Armory Comn., 905 Commonwealth Ave., armory Freeport St., Dorchester, $750,000.

▲ Mich., Harper Woods—SCHOOL—City, Marie T. Baron, clk., $1,500,000 bond election Aug. 11, Junior High School, auditorium, swimming pool, CD 6/21.

▲ Mich., Lansing—SCHOOL—City, Bd. of Educ., plans by O. J. Munson Assoc., 409 Bauch Bldg., new senior high school, south side to replace present bldg., $2,000,000.

Mich., Royal Oak—SCHOOL—Royal Oak Twp., Leonard Maker, secty., School District No. 4, John R. and 13 Mile Rd., plans by Earl G. Meyer, 806 Farwell Bldg., Detroit, elementary school, $500,000.

Minn., Hopkins—SCHOOL—Bd. Educ., L. M. Tanglen, supt. schools, plans by Bissell & Belair, 1111 Nicollet Ave., Minneapolis, grade school near Glen Lake, $750,000. CD 6/28.

▲ Mo., Carrollton—HOSPITAL—Carroll Co., defeated $1,500,000 bonds, hospital. Terney & Brey, 216 E. 10 St., Kansas City, Mo., archts.

▲ Mo., St. Louis—HOUSING—St. Louis Housing Auth., John J. O'Toole, exec. dir., 901 Washington Ave., Zone 1, 398 housing units in area bounded by Warne and Vandeventer Aves., North Market St. and alley north of Lincoln Ave., Proj. Mo.-1-9, $5,965,000; 834 housing units in area bounded by Newstead, Kennerly, Lamolin and Ashland Aves., Proj. Mo.-1-10, $12,505,000; 242 housing units in area bounded by Rutger and Caroline Sts., Cardinal, Montrose and Ewing Aves., and alley north of Park Ave., Proj. Mo.-1-12, $3,444,000. CD 1/9/45.

Mo., St. Louis—CENTER—U. S. Aeronautical Chart Information Center, 2 and Arsenal Sts., extensions, improvements to center. $861,000.

Neb. Wayne — AUDITORIUM-GYMNASIUM — Nebraska State Normal Bd., Capitol Bldg., Lincoln, plans by John Latenser & Sons, 1307 Farnam St., Omaha, auditorium-gymnasium bldg., Wayne Teachers College. $600,000.

N. J., Moorestown—SCHOOL—Moorestown Bd. Educ., W. 2 and N. Church Sts., plans by Petty & Croft, 39 E. Main St., constr. Mary E. Roberts Elementary School. $500,000.

N. J., Mountain Lakes—HIGH SCHOOL—Bd. Educ., Mountain Lakes, plans by Epple & Seaman, 901 Broad St., Newark, high school. $750,000.

▲ N. Y., Malverne—SCHOOL—Unified School Dist. No. 12, Malverne, high school on 38 acre Pines Pond site. $2,000,000. Proposition approved by voters June 22. CD 6/13.

▲ N. Y., Massapequa—SCHOOL—Union Free School Dist. No. 23, Raymond J. Lockhart Elementary School, Broadway and Baltimore Ave. $1,500,000. Proposition approved by voters June 21. CD 6/1.

▲ N. C., Raleigh—OFFICE—N. C. Pbc. Bldgs. & Grounds, plans by Holloway-Reeves, 2620 Hillsboro St., state building, Newborn Ave. $1,000,000. CD 6/17.

▲ O., Athens—DORMITORY—Ohio University, Athens, plans by Potter-Tyler-Martin & Roth, 128 E. 6 St., Cincinnati, Dormitory No. 11, on campus grounds, $1,750,000, I. C. Disher, 216 E. Ninth St., Cincinnati, consult. engr. To start about Jan. 1, 1956.

O., Greenwich—SCHOOL—Bd. Educ., N. Fairfield, Ripley, Greenwich, East Greenwich, high school at Greenwich and grade school in Ripley Twp. $614,000.

O., Newton Falls—SCHOOL—Bd. Educ., school expansion program. $700,000.

O., North Baltimore—SCHOOL—Bd. Educ., Sewell Cameron, supt., 2 story, brick high school addn. $616,000. CD 8/22/51.

▲ O., Toledo—ENGINEERING and SCIENCE CENTER—University of Toledo, Asa S. Knowles, pres., W. Bancroft St., plans by Bellman, Gillett & Richards, 518 Jefferson St., engineering and science bldg. $2,000,000. CD 1/12/53.

▲ Pa., Munhall—SCHOOL—School Dist. of Munhall, Munhall, plans by D. Roderick Jones, 135 Eighth Ave., Homestead, Junior-Senior High School, $2,000,000. CD 12/11/51.

(Continued on page 87)

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(Continued from page 84)

▲ **R. I., Coventry**—HIGH SCHOOL—Town, Henry J. Cooper, supt. Schools, High School, Hopes Rd., plans by Gardiner & Mather, 170 Westminster St., Providence, high school, Foster Site, Anthony Area, $1,250,000. Carl J. Malmfeldt & Assoc., 36 Pearl St., Hartford, Conn., assoc. archts. Plans ready about Sept. CD 7/26/54.

Tex., Bridge City—SCHOOL—Bridge City School Bd., Bridge City, school. $500,000.

▲ **Vt., Bennington**—LIBRARY, etc. ARTS—Bennington College, Bennington, library, $500,000; theatre-arts bldg. $1,000,000.

▲ **Wis., Milwaukee**—CITY HALL ANNEX—City, City Hall, plans by Eschweiler & Eschweiler, 720 E. Mason St., city hall annex, $5,300,000. CD 3/27/50.

Wyo., Buffalo—SCHOOLS—Bd. Educ., School District No. 2, Buffalo, voted bonds, high school addns. $550,000. Sam C. Hutchings, Jr., 1902 Thomas Ave., Cheyenne, consult. engr. CD 5/17.

Wyo., Cody—AUDITORIUM—School Dist. No. 6, Cody voted bonds, 1 story, 150x240 ft., brick auditorium and gymnasium. $750,000. Tresler & McCall, 1276 Sheridan Ave., consult. engrs. CD 6/14.

Man., Winnipeg—LABORATORY—Dpt. P. Wks., Ottawa, Ont., plans by E. A. Gardner, c/o owner. rust research laboratory for Agriculture Dpt., on campus of University of Manitoba. $650,000.

Ont., Niagara-On-The-Lake—SCHOOL—Niagara District High School Bd., Niagara Falls, plans by Craig & Madill, 290 Merton St., Toronto, high school, Niagara Stone Rd., 1½ mi. west of here. $525,000. CD 2/9/53.

Ont., Stratford — AUDITORIUM — Stratford Dist. High School Bd., W. P. Way, secy., Stratford, plans by Kyles & Kyles, 247 John St. S., Hamilton, auditorium for Stratford Collegiate Institute Addn. $825,000. CD 3/18/53.

▲ **Ont., Sudbury**—FEDERAL—Dpt. P. Wks., Hunter Bldg., Ottawa, federal bldg., Elm, Lisgar and Cedar Sts. $3,000,000. E. A. Gardner, c/o owner, ch. archt.

Ont., Whitby—JAIL—Ontario Co., Court House and City, City Hall, Oshawa, plans by Rounthwaite & Fairfield, 93 Yorkville Ave., Toronto, 3 story jail, $600,000. F. E. Crome, City Hall, Oshawa, city engr.

Ont., Windsor — BUILDINGS — City Council, Michael Patrick, mayor, Windsor, 2 buildings on River Front, civic center, incl. auditorium, $500,000.

COMMERCIAL BUILDINGS

▲ **Calif., Huntington Beach** — DWELLINGS — Windsor Homes Inc., 16358 Ventura Blvd., Encino, plans by Reichl & Starkman, 1022 S. La Cienega Blvd., Los Angeles, 172 frame, stucco dwellings, $1,500,000.

▲ **Calif., Oakland**—OFFICE—Kaiser Center, Inc., Kaiser Bldg., Oakland, office, etc., Webster, 20, 21 and Harrison Sts. $5,000,000.

Ill., Wheaton—HIGH SCHOOL—Catholic Bishop of Joliet, 4 E. Clinton St., Joliet, plans by Belli & Belli, 8 S. Dearborn St., Chicago, Zone 3, St. Francis High School near here. $750,000.

▲ **Ind., Indianapolis** — SHOPPING CENTER — Fountain Realty Co., 1105 Prospect St., shopping center, U. S. 52 and Tibbs Ave. in Eagledale Plaza, $2,000,000.

Iowa, Fairfield—DORMITORIES—Parsons College, Fairfield, plans by Charles Altfillisch, Decorah, Iowa, two dormitories. $723,652. CD 6/10.

▲ **Mich., Grand Rapids**—SHOPPING CENTER—Breton Village Center, Marvin Muller, 63 Jefferson St. S. E., 2 level shopping center 20 acre site, Burton and Breton Rds. $3,500,000.

▲ **Mich., Sterling**—SHOPPING CENTER—Carl R. Sames Co., Inc., 1256 Penobscot Bldg., plans by Walter J. Lehner & Sons and Design Assoc., 2533 W. Davison St., Detroit, archts. & engrs., shopping center, Van Dyke & 16 Mile Road, $15,000,000.

▲ **Mich., Troy**—OFFICE-Fruehauf Trailer Co., 10940 Harper St., Detroit, Zone 13, plans by Paul Moffett, 500 E. Lincoln, Birmingham, office bldg., Maple Rd. between Coolidge & Crooks St. $2,000,000.

Mo., Pattonville—RESIDENCES—Frank E. Zykan, Inc., 8654 Kathlyn Ave., Overland, Zone 14, 500 or more residences on 177 acres tract just purchased on St. Charles Rd. (U. S. No. 40) at western end of Pattonville Shopping Zone, $500,000.

▲ **Neb., Blair**—HOME FOR AGED—Nebraska Methodist Conference, 624 Grain Exchange, Omaha, home for aged. $1,500,000.

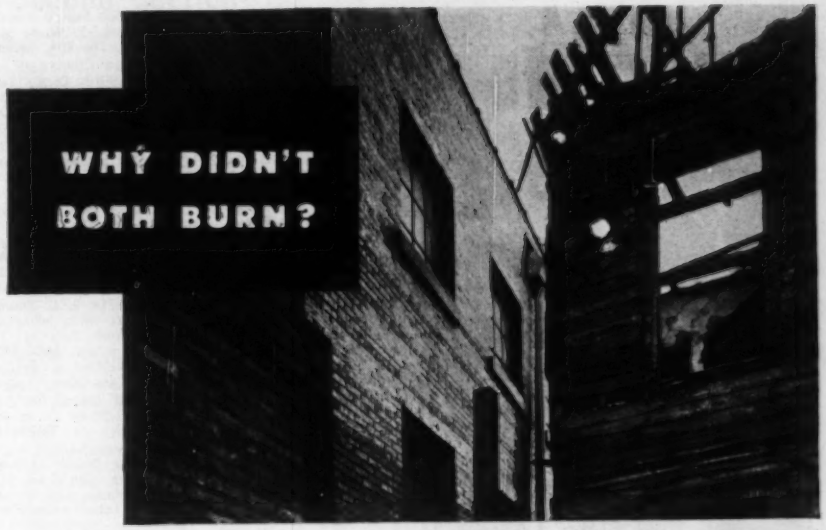
N. Y., Brooklyn—SCHOOL—The Roman Catholic Church of St. Catherine of Alexandria, Fort Hamilton Parkway and 41 St., plans by Joseph Mathieu, 32 Court St., Zone 2, 8 classrooms and auditorium addn. school. $500,000.

N. Y., Brooklyn—SCHOOL, etc.—St. Martin of Tours R. C. Church, Hancock St., and Knickerbocker Ave., plans by Vito Battista, 26 Court St., Zone 2, school addn. and auditorium, $500,000.

▲ **N. Y., Flushing**—STORE and OFFICE—Sanford Main Shopping Center, Inc., c/o Herbert Tannenbaum, archt., 205 E. 43 St., New York, Zone 17, 2 story store and office, Main St. and Sanford Ave., $1,000,000.

N. Y., Jackson Heights—APARTMENT—RHR Holding Inc., c/o Julius Fishkind, 161-19 Jamaica Ave., Jamaica, 6 story apartment, Victor Place, south of Judge St. $750,000.

▲ **N. Y., New York**—OFFICE—Columbia Pictures Corp., 711 Fifth Ave., Zone 22, plans by K. H. Ripnen Co., 440 Fourth Ave., Zone 16, office alterations, $1,000,000.



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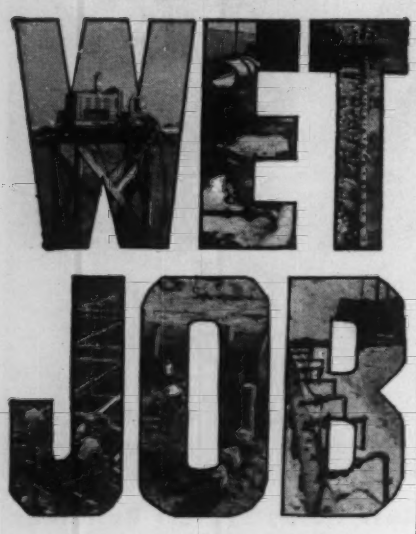

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▲ **N. Y., New York**—APARTMENT—800 Second Avenue Corp., c/o Pomerance & Breines, archts., 33 W. 46 St., Zone 19, 16 story apartment at 786-804 Second Ave., $2,000,000.

▲ **N. Y., New York**—OFFICE—666 Fifth Corp., 160 Park Ave., Zone 22, plans by Carson & Lundin, 50 Rockefeller Plaza, Zone 20, 41 story office 656-670 Fifth Ave., $18,000,000.

▲ **N. Y., New York**—OFFICE and PUBLISHING—The New York Times Co., 229 W. 43 St., Zone 36, newspaper office and publishing bldg. west End Ave. from 62 to 65 Sts. $2,000,000.

▲ **N. Y., New York**—OFFICE, etc.—Webb & Knapp, Inc., 270 Park Ave., Zone 17, plans by Pereira & Luckman, assoc. archts., 9220 Sunset Blvd., Los Angeles, Calif., 20 story office and showroom over Penn. R.R. tracks, Ninth and 10 Aves., 31 and 33 Sts., Palace of Progress, $100,000,000. CD 9/28/53.

N. Y., Springfield Gardens—SCHOOL—The R. C. Church of Christ the King, 145-39 Farmers Blvd., plans by George Sole, 347 E. 52 St., New York, Zone 22, 17 classroom and auditorium addn. to school, $600,000.

▲ **O., Akron**—APARTMENT—Sydney Albert & Edward Harris, c/o Robert Shuff, atty., 1st Natl. Tower, Plans by Rosenstock & Assoc. and Morris Lapidus, 256 E. 49 St., New York, N. Y. 7 story, 56 to 60 unit apartment, N. Portage Path and Tallmadge Parkway, $1,250,000.

O., Athens—CHURCH—First Methodist Church, Athens, plans by Potter-Tyler-Martin & Roth, 128 E. 6 St., church, $650,000. Beineke & Ruehlman, 626 Broadway, Cincinnati, consult. engrs. To start about Dec. 1. CD 4/6.

O., Toledo—HOMES—Pyle Constr. Co., 2211 Berdan, 69 homes in Meadowwood Pl., north of Dorr St. and west of Holland-Sylvania Rd. $500,000.

▲ **Pa., Feasterville**—SHOPPING CENTER—B F Pike Co., c/o Food Fair Stores, 2223 E. Allegheny Ave., Phila., plans by Louis Kasoff, 2223 E. Allegheny Ave., Phila., shopping center on 14 acres, $1,000,000.

Pa., New Castle—SUPERMARKET—Joseph's Market, 13 E. Long St., 1 story, 140x180 ft., block, self service supermarket, $500,000.

Pa., Phila.—SHOPPING CENTER—Ginsberg & Ginsberg, 705 W. Columbia Ave., plans by Leonard Solomon, 8024 Gilbert St., shopping center, Bustleton Pike between Knorr and Unruh Sts., $500,000.

Pa., Pittsburgh—CHILD GUIDANCE CENTER—University of Pittsburgh, Fifth and Bigelow Sts., plans by Schmidt Garden & Erickson, 104 W. Michigan Ave., Chicago, Ill., 3 story, steel, brick, block child guidance center, $500,000.

▲ **Pa., Upper Darby**—SCHOOL—Roman Catholic Archdiocese of Phila., 310 N. 19 St., Phila., Boys High School, Lansdowne Ave. and Garrett Rd., $2,500,000.

▲ **R. I., Providence**—CANCER TREATMENT and RESEARCH—Rhode Island Hospital, 593 Eddy St., plans by Shepley, Bulfinch, Richardson & Abbott, 1 Court St., Boston, Mass., George Building, cancer treatment and research, Lockwood St. $1,500,000.

▲ **Tex., Abilene**—SHOPPING CENTER—Owner, c/o Tom Wagley, Realtor, Abilene or Bob Ort, 4525 Pomona Road, Dallas, 140,000 sq. ft., 2 story 360x1040 ft. shopping center at Satles Blvd. and Amarillo St. $1,500,000.

▲ **Tex., Dallas**—STORE—Bond Clothes, 1520 Main St., Dallas, Tex. (parent organization, Bonds, c/o Barney Ruben, pres., 5 Ave. and 35 St., New York, N. Y.) apparel store. $5,000,000.

▲ **Tex., Houston**—HIGH SCHOOL—St. Pius X High School, 6501 Almeda Rd., plans by Dean Eichelberger, 2351 Kelving St., co-educational high school. $1,100,000. CD 11/24.

▲ **Tex., Orange**—HOTEL—Jack Tar's Orange House, c/o Ed Leach, pres. Jack Tar Hotel Co., Galveston, 127-room hotel, $1,250,000. CD 3/3, under LB. Orange Community Hotel Co., as owner.

▲ **Wash., Spokane**—RESIDENCES—H. B. M. Investments, Inc., c/o F. L. Bedard, 2136 N. W. Blvd., residential development in Riverview Hills addn. $2,000,000.

▲ **Que., Jonquiere**—COLLEGE—Les Peres Oblats de Marie-Immaculee, Bursar's Office, 116 Notre Dame St., Hull, classical college, $1,500,000.

INDUSTRIAL BUILDINGS

▲ **Ala., Anniston**—PLANT—National Gypsum Co., Inc., Baker Bldg., Delaware Ave., Buffalo, N. Y., plant to exceed $2,000,000.

Mich., Madison Heights—PLANT—Square D Co., 6060 Rivard, Detroit, Zone 11, plans by Sundberg-Ferar, 1204 S. Woodward St., Royal Oak, 1 story heavy electrical equipment mfg. plant, $700,000.

▲ **Mich., Melvindale**—WAREHOUSE—The Burton Co., Meyer Fishman, vice pres., 3855 E. Outer Drive, warehouse on 10 acre site West Outer Drive between Fort and Dix Sts. $1,000,000.

▲ **N. Y., New York**—OIL TERMINAL—Gotham Oil Terminal, Inc., c/o S. M. Bernstein, pres., Premium Coal & Oil Co., Inc., 200 Morgan Ave., Brooklyn, Deepwater fuel oil terminal on North River waterfront between W. 54 and W. 56 Sts. $1,000,000, Otto J. and Warren Sambach, 89-30 161 St., Jamaica, N. Y., engrs. CD 6/9.

▲ **O., Mansfield**—FACTORY, etc.—General Motors Corp., Fisher Body Div., General Motors Bldg., Detroit, Mich., 1 and 2 story, 1,776,000 sq. ft. factory, baler house, power house, sub-stations, covering 48,000 sq. ft., on 200 acre site 2 mi. west between U. S. Rte. 30 North and South, $2,000,000.

Okla., Cushing — REFINERY — Midland Co-operatives, Inc., A. J. Smaby, genl. mgr., 739 Johnson St. N.E., Minneapolis, Minn., unit at Cushing refinery to increase yield of high octane gasoline, 3,000-bbl. per day "platformer". $650,000. Universal Oil Products Co., 30 Algonquin St., Des Plaines, Ill., consult. engr.

▲ **Pa., Homestead**—OFFICE—U. S. Steel Corp., Wm. Penn Place, Pittsburgh, plans by Hoffman & Crumpton, Century Bldg., Pittsburgh, 5 story, steel, masonry office. $2,500,000.

Pa., Kobuta—LABORATORY—Koppers Co., Inc., Koppers Bldg., Pittsburgh, plans by Prack & Prack, 509 Martin Bldg., Federal St., Pittsburgh, brick, block, steel development Laboratory, $500,000. CD 4/7.

Tex., Arlington—PLANT—American Can Co., Lockwood and Clinton Dr., Houston, container mfg. plant. $750,000. Bids end of July. CD 6/2.

▲ **Utah, North Salt Lake City**—REFORMING UNIT—Western States Refining Co., North Salt Lake City, reforming unit, asphalt plant, $1,200,000.

Wash., Edmonds—REFINERY EXPANSION—Union Oil Co., 2901 Western Ave., Seattle, asphalt refinery expansion, $500,000.

Wash., Yakima—WAREHOUSE—Associated Grocers Inc., 3301 Norfolk St., Seattle, 110,000 sq. ft. rein.-con. warehouse, $850,000.

Alta., Calgary—SERVICE—Calgary Electric Light Dpt., City Hall, plans by Rule, Wynn & Rule, 513 8th Ave. W., masonry, steel service bldg., 3-floor office sect., 1-story warehouse with truck loading and storing facilities. $600,000.

▲ **Ont., Beachville**—PLANT—Canada Cement Co., Ltd., J. H. Breen, Mgr., Phillips Square, Montreal, Que., cement plant, just north of here. $12,000,000.

▲ **Ont., Blind River**—MILL—Consolidated Denison Mines Ltd., Suite 305, Royal Bank Bldg., 10 King St., E., Toronto, 5,000 ton uranium ore mill on 5 acre site. $35,000,000-$40,000,000. R. M. Way & Co. Ltd., 696 Yonge St., Toronto, consult. engrs.

▲ **Ont., Clarkston**—PLANT—St. Lawrence Cement Co. Ltd., Boulevard Ste. Anne, Quebec City, Que., cement plant, on 185-acre site to supply cement for St. Lawrence Seaway, west of Toronto, $15,000,000.

▲ **Ont., Sault Ste. Marie**—MILL—Mennesman Tube Co. Ltd., Sault Ste. Marie, seamless steel pipe $20,000,000. Foundation of Canada Eng. Corp. Ltd., 1220 Bay St., Toronto, consult. engrs. Work to start in July.

Ont., Toronto—WAREHOUSES—Toronto Elevators Ltd., 417 Queen's Quay West, reconstr. 7 warehouses on Queen's Quay West $550,000. CD 6/23/47.

▲ **Ont., Woodstock**—PLANT—Associated Portland Cement Manufacturers, London, England, plant for mfg. cement products for North Oxford Twp. $7,000,000.

UNCLASSIFIED

Indiana—RURAL DISTRIBUTION LINES—Southeastern Indiana Rural Electric Membership Corp., 101 Walnut St., Osgood, 100 mi. rural distr. lines and sys. imprvs. Ripley Co. $690,000.

▲ **Iowa, Des Moines**—PASSENGER DEPOT, etc.—Chicago, Rock Island & Pacific R.R. Co., W. B. Throckmorton, Ch. Engr. LaSalle St. Station, Chicago 5, Ill., passenger depot $900,000; service bldg., mail handling structure, parking area, $1,100,000.

Mo., St. Louis—FIRE ALARM SYSTEM—City, Frank J. McDevitt, pres. Bd. P. Service, 304 City Hall, 12 and Market Sts., Zone 3, plans by Hellmuth, Obata & Kassabaum, Inc., 825 Locust St., St. Louis, Zone 1, fire alarm sys. headquarters to be placed underground in hill in Forest Park north of Oakland Ave. about 550 ft. west of Kingshighway Rds., etc., $700,000. CD 6/15.

N. Y. New York—PIER—Grace Line, 3 Hanover Square, Zone 4, 2 story addn. to south wing of Pier 58, North River, $627,237.

Ohio—GAS PIPE LINE—Ohio Fuel Gas Co., 109 N. Front St., Columbus, 18.9 mi. natural gas pipe line in Hardin and Allen Counties, and new metering station at Lima. $792,400. CD 5/11.

O., Akron—PARKING DECK—Western Realty Co., c/o Christe Philios, Western Drive-in Restaurant, parking deck, 3-level, at S. High and E. Exchange Sts. for 280 cars, $900,000.

Oklahoma—RURAL DISTRIBUTION LINES—Canadian Valley Electric Co-operative, Seminole, 222 mi. rural distr. line, sub-station facilities and sys. imprvs. Hugher Co. $930,000. CD 1/9/52.

Texas — TELEPHONE LINES, etc. — Rock Springs & Nueces Canyon Telephone Co., Rock Springs, sys. imprvs. and addnl. pole telephone lines, Edwards Co. $530,000.

▲ **Utah**—DRILLING, etc.—Mountain Fuel Supply Co., 36 S. State St., Salt Lake City, exploration, drilling and gathering, $2,900,000; mains, lines, meters, regulators and structures, $5,600,000; general plant, $1,200,000; imprvs. of present transmission sys. $550,000, Salt Lake Co. Total $10,000,000.

▲ **British Columbia**—GAS LINE—Inland Natural Gas Co. Ltd., 1111 W. Georgia St., Vancouver, 200 mi. 10 in. natural gas line from Kamloops to U. S. border. $8,000,000.

Que., Herbertville—RADAR INSTALLATION—Dpt. National Defence, 125 Elgin St., Ottawa, Ont., radar installation, incl. constr. admin. offices, fire station and extens. to recreation hall, roads, etc. $800,000. CD 7/5/30.

▲ **Que., Quebec City**—HARBOR IMPRVS.—National Harbors Bd., West Block, Parliament Bldgs., Ottawa, Ont., harbor imprvs., incl. exten. jetty at Wolfe's Cove, wharf for berthing tankers, completion of and reconditioning Wharf No. 20. $1,300,000.

Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
July 19 Massachusetts
STREETS AND ROADS
July 19, 21 Massachusetts

BUILDINGS—LB & CA

Carroll-Verge & Whipple, Inc., 370 Wahconah St., Pittsfield, Mass., CA $874,186, JUNIOR HIGH SCHOOL, RUTLAND, VT. City, School Dpt., Rutland, Vt. Bids June 21. CD 6/27, under LB.

▲ **D. C. Loveys Co.,** 171 Harvey St., Cambridge, Mass. CA $1,103,966. Granite Street SCHOOL, CAMBRIDGE, MASS. City, City Hall, Cambridge, Mass. CD 6/20, under LB.

Joseph P. Flynn, 26 Custom House St., Providence, R. I., LB $809,557, Junior-Senior HIGH SCHOOL, Rockland Rd., SCITUATE, R. I. Town, Junior High School Bldg. Comn., Danielson Pike, North Scituate, R. I. Bids June 30. CD 6/20.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
July 22, 29 Pennsylvania
STREETS AND ROADS
July 19, 21, 26, 28 New Jersey
July 21, 29 Pennsylvania

▲ **New York**—BA 7/27—Triborugh Bridge & Tunnel Auth., Admin. Bldg., Randall's Island, New York, Zone 35, Conduit Blvd. Contr. No. CB-2, grading drainage, utilities and paving Linden Blvd. to Atlantic Ave., Brooklyn and Queens Boro. Plans deposit $50. Contract cancelled, lack of funds. CD 5/25, under CA.

HEAVY CONSTRUCTION—LB & CA

▲† **Dean Constr. Co., Inc.,** 29-28 41st Ave., Long Island City, N. Y., LB $1,097,335, 4 shops, 3 operation bldgs., etc. McGuire Air Force Base, No. 36-109-55-86 WRIGHTSTOWN, N. J. U. S. Eng., 2635 Abbotsford, Phila. Pa. Bids June 22. CD 6/9.

▲ **PENNSYLVANIA**—State Hy. Dpt., 506 N. Office Bldg., Harrisburg,

Pa.—**Ralph Myers Contg. Corp.,** P.O. Box 125, Pitcairn, Pa. CA $1,912,729. crushed aggregate base with bit. surf. 6.56 mi., 2 rein.-con. arches, 2 metal plate pipe culverts, U. S. Rte. 422 in Summit, Clearfield and West Franklin Twps., Butler and Armstrong Counties;

Pa.—**Latrobe Road Constr., Inc.,** P.O. Box 150, Latrobe, Pa. CA $1,178,058. c. conc. pavement, 22 ft. wide 4.47 mi., exten. rein.-con. arch over Idlewild Run, rein.-con. bridge over Coal Pit Run, I-beam bridge over Mill Creek, U. S. Rte. 30 (Lincoln Hy.) Proj. Ligonier Twp. and Borough will extend four-lane hy. from Ligonier west toward Greensburg, Westmoreland Co. CD 6/15, under LB.

BUILDINGS—LB & CA

▲ **A. A. Roth,** c/o Schulman & Soloway, archts., 100-15 Queens Blvd., Forest Hills, N. Y. Owner Builds. $1,200,000. 8 story PROFESSIONAL BLDG., Main St. from Franklin to Blossom Aves., FLUSHING, N. Y.

▲ **Woodcliff Building Org.,** c/o Alwin Cassens Jr., archt., 145 S. Franklin Ave., Valley Stream, N. Y. Owner Builds. $4,500,000. 200 HOUSES on tract on Old Country Rd. east of Salisbury Park, WESTBURY, N. Y.

▲ **Louis Coris & Sons,** c/o George Catino, Jr., 20 Broad St., Bloomfield, N. J. Owner Builds. $1,800,000. 122 HOUSES, Broad St., BLOOMFIELD, N. J.

Manton & Detrolio, c/o Roth-Miller Co., 972 Broad St., Newark, N. J. Owner Builds. $800,000. 32 HOUSES, Goffle Hill Rd., HAWTHORNE, N. J.

▲ **Mountainside Park Homes,** c/o S. J. Glabenson, archt., 200 E. 37 St., New York 16, N. Y., Owner Builds, $2,750,000. 120 HOUSES on tract near Summit Rd., MOUNTAINSIDE, N. J.

Sharon-Pensauken Co., 1005 Wilson Bldg., Camden, N. J., Separate Contracts $800,000, RESIDENTIAL DEVELOPMENT, Clayton Ave., PENNSAUKEN, N.J., Lester H. Weckesser, Erlton, N. J., archt.

▲ **Country Squire Estate,** c/o David Van Dillen Agency, 833 Clifton Ave., Clifton, N. J. Owner Builds. $1,600,000. 100 HOUSES, on The Boulevard, PEQUANNOCK, N. J.

McVaugh Constr. Co., 526 Main St., Riverton, N. J. CA $950,000, MANUFACTURING PLANT addn., RIVERSIDE, N. J. B. F. Goodrich Co., Oaks, Pa. Robert Heins, Oaks, Pa., and H. E. Cook, Akron, O., co. engrs. CD 5/12.

▲ **C. A. Hunt Eng. Co.,** 398 Main St., Hackensack, N. J. CA Est. $1,000,000. 1 story WAREHOUSE, SECAUCUS, N. J. Main Warehousing, Inc, c/o contractor. Alan Wood Fraser, Liberty Rd., Bergenfield, N. J., archt.

▲ **H. E. Stoudt & Son, Inc.,** 1212 S. Fifth St., Allentown, Pa. CA $1,000,000. CHURCH and SUNDAY SCHOOL, BETHLEHEM, PA. First Presbyterian Church, 713 Centre St., Bethlehem, Pa. Bids June 10. CD 4/28.

▲ **Ranch Land Builders,** 1611 E. Wadsworth Ave., Phila., Pa. Separate Contracts. $1,750,000. RESIDENTIAL DEVELOPMENT, Willow Grove Ave., CHELTENHAM, PA.

▲ **A. L. Levin,** 825 Second Ave., Bristol, Pa. Separate Contracts. $2,500,000. RESIDENTIAL DEVELOPMENT, 162 units, Lower Makefield Twp., FALLSINGTON, PA. Samuel Paul, 89-51 164 St., Jamaica, N. Y., archt.

SOUTH

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
July 19 South Carolina
STREETS AND ROADS
July 19 South Carolina

HEAVY CONSTRUCTION—LB & CA

▲† **Virginia Engr. Co.,** 80 29th St., Newport News, Va., CA $1,580,725. hangar-maint., ENG-44-110-55-36, LANGLEY AIR FORCE BASE, VA. U. S. Eng., foot of Front St., Norfolk 1, Va. Bids June 24. CD 6/2.

▲† **Blythe-Conner** (Blythe Bros. Co., Inc., 2911 Hutchinson Ave., Charlotte, N. C. and Frank Conner, 3500 Westminster Ave., Norfolk, Va.) CA $1,988,200, 2/3's Class C, maintenance hangar, Naval Air Station, NOY 85876, Spec. 43062, OCEANA, VA. P. Wks. Office, Fifth Naval Dist., U. S. Naval Base, Norfolk, Va. Bids June 28, awarded June 30. CD 7/6, under LB.

▲† **Henry C. Beck Co.,** 1st. Natl. Bank Bldg., Atlanta, Ga., CA $1,730,000. constr. 4 squadron hangars and Class C maintenance hangar, ordnance storage structures at Marine Corps Auxiliary Landing Field, NOY 85631, BEAUFORT, S. C. P. Wks. Office, Dpt. Navy, Naval Base, Charleston, S. C. Bids June 21. CD 6/27, under LB.

▲† **Wm. H. Singleton Co., Inc.,** 1240 Jefferson Davis Hy. Arlington, Va., and **W. H. Sullivan Co., Inc.,** 4413 W. Market St. Ext., Greensboro, N. C., LB $1,047,000. central heating sys. and fire pump station, Spec. 45188, BEAUFORT, S. C. P. Wks. Office, U. S. Naval Base, Charleston, S. C. Bids June 24. CD 6/1.

▲† **Wade Lahar Constr. Co.,** Mountain Home, Ark., CA $1,611,560, clearing and topping approx. 23,546 acres in Gwinnett, Hall, Forsyth, Dawson and Lumpkin Counties, in Buford Dam Area, GEORGIA, U. S. Eng., Grant St., Mobile, Ala. Bids June 30. CD 5/6.

▲† **Farnsworth & Chambers Co., Inc.,** Box 74, Houston, Tex. LB $1,228,437. squadron operations bldg., Lake Charles Air Force Base, ENG-41-243-55-67, LAKE CHARLES, LA. U. S. Eng., Box 1229, Galveston, Tex. Bids June 29. CD 6/14.

▲† **Farnsworth & Chambers Co., Inc.,** Box 74, Houston, Tex. CA $1,880,581. six story, masonry dormitories, mess hall, Lake Charles Air Force Base, ENG-41-243-55-68, LAKE CHARLES, LA. U. S. Eng., Box 1229, Galveston, Tex. Bids June 24. CD 5/25.

▲† **Farnsworth & Chambers Co., Inc.,** Box 74, Houston, Tex. CA $1,812,828. ordnance storage facilities, Lake Charles Air Force Base, ENG-41-243-55-79, LAKE CHARLES, LA. U. S. Eng., Box 1229, Galveston, Tex. CD 7/7, under LB.

Thos. Nolan, 4017 S. Brook St., Louisville, Ky. LB $991,000 (5 bidders) Sect. D. Upper Dry Run Sewer, LOUISVILLE, KY. Metropolitan Sewer Dist., 414 W. Jefferson St., Louisville, Ky. Bids June 30. CD 5/26.

BUILDINGS—LB & CA

▲ **C. G. Shockley Constr. Co.,** 2020 Blanding St., Columbia, S. C., CA Est. $1,000,000. 168,000 sq. ft. fabricating PLANT, JOHNSTON, S. C. Riegel Textile Corp., 260 Madison Ave., New York, N. Y. Bids May 2. CD 4/28.

Cherokee Constr. Co., 23 Second Ave., Cleveland, Tenn. LB $809,860, six SCHOOLS, RESACA Elementary School; Belwood Elementary School; Fairmount High and Elementary School; Red Bud Elementary and High School; Sonoraville Elementary School; Gordon County High School, CALHOUN, GA. Georgia School Bldg. Auth., 41 Exchange Pl., S. E., Atlanta, Ga. Bids June 28. CD 6/9.

R. G. Foster, Wadley, Ga. LB $955,000. Wilkes County Training SCHOOL; Washington High SCHOOL; Tignall Elementary SCHOOL, in Wilkes Co. WASHINGTON, GA. State School Bldg. Auth., 41 Exchange Pl. S. E., Atlanta, Ga. Bids June 28. CD 5/23.

▲ **Wood Constr. Co.,** Box 225, Quitman, Miss. LB $1,498,000 (7 bidders) Proj. I 4 EH-1 and 2, two 50,000 sq. ft. steel, masonry PATIENT BLDGS. for East Louisiana State Hospital, Colony, JACKSON, LA. State Bldg. Auth., State Capitol, Baton Rouge, La. Bids June 28. CD 6/21.

West Baton Rouge Parish Police Jury, Port Allen, La. rejected bids June 24, 2 story, brick, stone courthouse, PORT ALLEN, LA. LB $825,620. CD 5/27.

† **Blount Brothers Constr. Co.,** Bell Bldg., Montgomery, Ala. CA $827,000. REDUCING PLANT BLDG. C-340 and C-340D, Proj. C-340, PADUCAH, KY. Atomic Energy Comn., 1901 Constitution Ave. N. W., Wash., D. C. CD 6/1, under LB.

▲ **S. S. Jacobs Co.,** Hildebrandt Bldg., Jacksonville, Fla., LB $3,000,000, 407,000 sq. ft. food distribution TERMINAL, CHATTANOOGA, TENN. Chatanooga Food Terminal Corp., c/o contractor. Awarded June 24.

▲ **J. A. Jones Constr. Co.,** 209 W. 4 St., Charlotte, N. C., CA $3,783,835, est. $3,500,000, general constr. 30 story OFFICE BLDG., NASHVILLE, TENN. Life & Casualty Insurance Co. of Tenn., 159 4th Ave. N., Nashville, Tenn. Awarded July 1, CD 6/10/54; **Westinghouse Electric Corp.,** 150 Pacific Ave., Jersey City, N. J., CA $500,000, installing elevators in office, (Nashville, Tenn.), Awarded June 28.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
STREETS AND ROADS
July 19 Wisconsin

▲ **Wis., West Allis**—SCHOOL—BA 8/1—Bd. Educ., 7510 W. Natl. Ave., Wildwood Grade School, $1,064,000. Lindle-Schutte & Assoc., 808 N. 3rd St., Milwaukee, engrs. and archts. CD 12/22.

▲ **Mich., Alpena**—HOSPITAL—BA 8/9—Bd. Trustees Alpena Hospital, opened at City Hall, Alpena, hospital addn. $1,095,000, Schmidt, Garden & Erickson, 104 S. Michigan St., Chicago, Ill., archts. Bids 4/20 rejected. CD 4/15.

HEAVY CONSTRUCTION—LB & CA

▲ **James Stewart Corp.,** 228 N. LaSalle St., Chicago, Ill., LB $11,600,000, two 6.5 million bu. grain elevators, in connection with conversion of Lake Calumet area to Port District, CHICAGO, ILL. Chicago Regional Port District, 160 N. LaSalle St., Chicago 1, Ill. DeLeuw Cather & Co., 150 N. Wacker Dr., Chicago 6, Ill., engrs. Bids June 30;
A. L. Jackson Co., 300 West Washington St., Chicago, Ill., LB $2,800,000, transit sheds, offices, backup warehouses and other buildings (Chicago, Ill.);
Great Lakes Dredge & Dock Co., 228 N. LaSalle St., Chicago, Ill., LB $1,800,000, dredging and dock constr.; (Chicago, Ill.);
Krug Excavating Co., 11835 South Central Park, Blue Island, Ill., LB $1,700,000, grading and site preparation (Chicago, Ill.);
Paschen Contrs., Inc., 2739 N. Elston St., Chicago, Ill., LB $173,000, railroad embankment and track work (Chicago, Ill.);
Edward Electric Co., 1345 W. Washington St., Chicago, Ill., LB $354,000, electrical work, (Chicago, Ill.);
P. Nacey Co., Inc., 937 S. State St., Chicago, Ill., LB $146,000, sprinkler sys. (Chicago, Ill.);
Commonwealth Plumbing Co., Inc., 5910 N. Western Ave., Chicago, Ill., LB $113,000, plumbing (Chicago, Ill.);
S. J. Reynolds Co., Inc., 2229 W. Ogden St., Chicago, Ill., LB $94,000, heating and ventilating (Chicago, Ill.).

▲† **Joseph D. Bonness & Becker Constr. Co.,** 1409 N. 27 St., Milwaukee, Wis., LB $2,798,668, est. $2,938,757, AFRTC facilities, Mitchell Field, ENG-11-032-55-33, MILWAUKEE, WIS. U. S. Eng., 475 Merchandise Mart, Chicago 54, Ill. Bids June 29.

▲ **MICHIGAN**—State Hy. Dpt., Stevens T. Mason Bldg., Lansing,

Mich.—**Lewis & Frisinger Co.,** 1110 Harper St., Ann Arbor, Mich. LB $1,243,619, est. $1,160,000. 22 ft. dual c. conc. 6.833 mi. M-24 to Lake Orion Village, F 63-12 C3-R, F 63-23 R (F 238 12), Oakland Co.; LB $692,878, est. $670,000. c. conc. 8.317 mi. Belsay and Genesee Rds., CS 25-65 C1 (S 580 2), CS 26-66 C1 (S 803 1), Genesee Co.;

Mich.—**Carl Goodwin & Sons,** Allegan, Mich. LB $562,787, est. $540,000. dual c. conc. 1.4 mi. Norton Glade Expressway and intersection, and connection, FI 61-47 C7-U, FI 61-47 C8-R, (FI 243 1), Muskegon Co.;

Mich.—**Thomas E. Currie Co.,** 2531 Conner St., Detroit, Mich. LB $237,449, est. $160,000. c. conc. 2.003 mi. and 22 ft. wide on Newburgh Rd. from M-153 to Joy Rd. and north 400 ft., CS 82-228 C1 (S 1308 1), Wayne Co.;

Mich.—**L. W. Edison Co.,** 924 Floral Dr., Grand Rapids, Mich. LB $491,960, est. $470,000. c. conc. 3.5 mi. relocation of US-31 and US-31, F 64-3 C2-R (F 128 25), F 64-21 C8-R, F 64-21 C9-U (F 128 26), Oceana Co.;

Mich.—**W. H. Knapp,** Monroe, Mich. LB $124,450. est. $120,000. aggregate base course, b. conc. surf. 2.24 mi. South Huron Drive, southeast, CS 58-60 C1 (S 791 1), Monroe Co.;

Mich.—**R. W. Meyer Co.,** Cadillac, Mich. LB $278,259. b. conc. 1.202 mi. M-55 and US-131, M 83-11 (F 133 12), C4 U, F 83-32 C3-U, F 83-32 C4-U, Wexford Co.;

Mich.—**Paul C. Miller,** Sparta, Mich. LB $144,653, est. $140,000 b. conc. surf. 7.233 mi. M 13, M-21 M-24, and M-33, Mm 25-131 C1, Mm-25-131 C2, etc., Genesee and Lapeer Counties;

Mich.—**Cross & White,** Grand Rapids, Mich. LB $109,739, est. $100,000. c. conc. 1.21 mi. 22 ft. wide Edward N. Hines Hy., ramp to Ann Arbor Trail, CS 82-187 C4 (S 173 13), Wayne Co. Bids June 22. CD 6/17.

BUILDINGS—LB & CA

▲ **Knowlton Constr. Co.,** Bellefontaine, O. LB $1,533,350, general contract RESIDENCE and DINING HALL for women at Bowling Green State University, BOWLING GREEN, O. State Dpt. P. Wks., State Dpt. Bldg., Columbus, O. Bids June 14. CD 5/24.

▲ **Kaiser Engineers,** 1924 Broadway, Oakland 12, Calif. CA Est. $4,000,000. design and construct basic refractory brick PLANT, COLUMBIANA, O. Kaiser Aluminum & Chemical Corp., 1924 Broadway, Oakland, Calif.

▲ **Garwick & Ross, Inc.,** 9990 W. Third Ave., Columbus, O. CA $1,750,000. 1 story food WAREHOUSE and OFFICE with storage and shipping facilities,

COLUMBUS, O. Kroger Co., 1240 State St., Cincinnati, O. CD 10/29.

▲ **Robert W. Setterlin & Sons,** 2000 Kenny Rd., Columbus, O. CA $1,233,000. general contract HIGH SCHOOL, COLUMBUS, O. Upper Arlington School Dist., 211 N. Devon Rd., Columbus, O.

▲ **Arthur Rodenbeck,** 4800 Airway, Dayton, O. Owner Builds. $2,000,000. 175 HOMES, with basements, east of Dayton near corner Woodman Dr. and Dorothy Lane, in Indian Village plat, KETTERING, O.,

▲ **Carl A. Winters,** 132 N. Main St., Dayton, O., Owner Builds. $2,000,000. 175 HOMES, near Woodman Dr. and Dorothy Lane, in Indian Village plat, KETTERING, O.,

▲ **Hi-Lo Homes, Inc.,** 139 N. Clark St., Chicago, Ill. Own Forces. $2,400,000. 170 HOMES, Ridge and Village area, Worth Twp., near CHICAGO, ILL.

▲ **J. W. Snyder Co.,** 307 N. Michigan St., Chicago 1, Ill., LB $2,786,431 (3 bidders) High and Elementary SCHOOL, Avenue "O" and 114 St., CHICAGO, ILL. Bd. Educ., 228 N. Lasalle St., Chicago 1, Ill. Bids June 17. CD 6/1.

▲ **Len Coopers,** 6283 Archer Ave., Chicago, Ill. Own Forces. $1,600,000. 100 HOMES, along Cicero Ave. to Knox, 47 to 51 Sts., CHICAGO, ILL. John Bartolomeo, 10836 S. Western Ave., Chicago, Ill., archt.

▲ **Gust K. Newberg Constr. Co.,** 2040 N. Ashland St., Chicago, Ill., CA Est. $25,000,000 general constr. 1.5 million sq. ft. STAMPING PLANT, 140-acre site in Bloom Twp., near CHICAGO HEIGHTS, ILL. Ford Motor Co., 3000 Schaefer St., Dearborn, Mich.; **Dravo Corp.,** Neville Island, Pittsburgh, Pa., CA design and constr. boiler house (Chicago Heights, Ill.).

▲ **Valenti Builders,** 5515 Elston St., Chicago, Ill. Own Forces. $3,500,000. 240 HOMES, DEERFIELD, ILL.

▲† **Wilsey, Collins & Reynolds,** 100 East Washington St., Joliet, Ill., CA $2,621,565, financing, constr., maintaining and operating the 264 unit Military Housing Project No. N-26, GLENVIEW, ILL. Ninth Naval District, Bldg. 1-A Great Lakes, Ill. CD 5/25.

▲ **Sawusch Constr. Co.,** 1908 Wesley St., Berwyn, Ill. Own Forces. $10,000,000. 400 HOMES, south of NAPERVILLE, ILL.

▲ **Ladd Enterprises,** 5532 Division St., Chicago, Ill. Own Forces. $1,000,000. 80 HOMES, near NORTHBROOK, ILL.

Veem Constr. Co., 819 Waukegan Rd., Northbrook, Ill. Own Forces. $800,000. 30 HOMES, Dundee Rd. NORTH BROOK, ILL. Whalley & Gould, 3131 Lincoln St., Chicago, Ill., archts.

▲ **J. F. Arman & Co.,** 13500 S. Crawford St., Robbins, Ill. Own Forces. $8,000,000. 800 HOMES, ROBBINS, ILL. M. J. McCarthy, 6201 S. Washtenaw St., Chicago, Ill., archt.

▲ **J. H. Findorff & Son, Inc.,** 601 W. Wilson St., Madison, Wis., CA $1,500,000, BOILER ROOM and GENERATING PLANT addn., MADISON, WIS. Madison Gas & Elec. Co., 100 N. Fairchild St., Madison, Wis. Pioneer Service & Eng. Co., 231 N. LaSalle St., Chicago, Ill., engr. and archt. CD 1/26.

▲ **O. W. Burke Co.,** 1032 Fisher Bldg., Detroit, Mich. LB $4,102,214, est. $4,000,000. (3 bidders) HIGH SCHOOL, ROYAL OAK, MICH. City, Bd. Educ., 1026 N. Main St., Royal Oak, Mich. Bids June 17. CD 5/17.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

▲ **OKLAHOMA**—BA 7/26—Oklahoma Turnpike Auth., 321 N.E. 24 St., Oklahoma City,

Craig and Mayes Counties—3 bridges near Big Cabin, $225,000.

Craig and Ottawa Counties—6 county road separations near Afton, $384,000.

Ottawa Co.—7 bridges on turnpike near Afton, $406,000. DeLeuw Cather & Co., 321 N.E. 24 St., Oklahoma City, Zone 5, engrs. CD 3/23/54, under Streets and Roads.

▲ **OKLAHOMA**—BA 7/26—Oklahoma Turnpike Auth., 321 N.E. 24 St., Oklahoma City,

Ottawa Co.—grade, drainage 6.273 mi. in Turnpike near Afton, $525,000.

Rogers Co.—grade, drainage 2.303 mi. east of Catoosa, $570,000.

grade, drainage 5.681 mi. near Claremore. $563,000. DeLeuw Cather & Co., 321 N.E. 24 St., Oklahoma City, Zone 5, engrs. CD 3/23/54.

BUILDINGS—BA

▲ **Iowa, Iowa City**—MEDICAL RESEARCH—BA 7/21—Iowa State Bd. Educ., State Office Bldg., Des Moines, medical research bldg., University of Iowa, $1,266,000. Extended date. Tinsley, Higgins, Lightner & Lyon, 526 Liberty Bldg., Des Moines, archts. CD 6/7.

▲ **Minn., Virginia**—HOSPITAL—BA 8/2—City, J. G. Milroy, Jr., clk., Virginia, hospital addn., $1,500,000, Damberg & Damberg, Virginia, and Ellerbe & Co., E-505 First National Bank Bldg., St. Paul, archts. CD 5/23.

HEAVY CONSTRUCTION—LB & CA

▲† **Hyde Constr. Co.,** 1804 N. Mill St., Jackson, Miss. CA $1,350,231, est. $1,956,359. road rehabilitation, curbs, gutters, drainage, Blytheville Air Force Base, Serial No. ENG-03-050-55-115, BLYTHEVILLE, ARK. U. S. Eng., Box 867, Little Rock, Ark. Bids June 24. CD 6/29, under LB.

▲ **KANSAS**—Kansas Turnpike Auth., P.O. Box 681, Topeka,

McCarthy Imprvt. Co., 602 Kahl Bldg., Davenport, Iowa. LB $1,690,211. b. conc. Proj. 5-15-P (1), Butler and Chase Counties; LB $1,805,411. b. conc. Proj. 5-16-P (1), Chase Co. Bids July 1. CD 6/17.

† **Leslie Miller, Inc.,** 2914 E. Rosedale St., Fort Worth, Tex. LB $994,902, est. $1,320,907. constr. standard aircraft refueling sys. multiple outlet hydrant type, Forbes Air Force Base, ENG-55-94, TOPEKA, KAN. U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. Bids June 28. CD 6/6.

OKLAHOMA—Oklahoma Turnpike Auth., 321 N.E. 24 St., Oklahoma City, Zone 5,

J. A. Raines Co., 2311 Callahan St., Muskogee, Okla. CA $888,301, est. $795,706, grade 0.182 mi. and four-lane bridge over Spring River at Miami, Ottawa Co. Bids June 28, awarded June 29. CD 7/5, under LB.

▲ **T. C. Bateson Constr. Co.,** Box 7305, Inwood Station, Dallas 9, Tex., CA $4,243,899, est. $5,000,000. Airport Terminal for Love Field, DALLAS, TEX. City, City Hall, Main and Harwood Sts., Dallas, Tex. Bids June 10. CD 6/16, under LB.

▲† **T. C. Bateson Constr. Co.,** Box 7305 Inwood Sta., Dallas, Tex., CA $1,258,760, refurbishing, imprv. hangar bldg. and stripping bldg., NOY-1105-AE-147-C-153, DALLAS, TEX. Bureau Yards & Docks, 8th Naval Dist., P. Wks. Office, New Orleans, La., c/o Chance Vought Aircraft Inc., Box 5907, Dallas, Tex. Smith & Warder, 405 W. Jefferson St., Grand Prairie, Tex., archts. CD 7/11/51.

▲ **Kieffer Plumbing & Heating Co.,** 6411 Harry Hines Blvd., Dallas, Tex., CA $1,310,781, plumbing, heating, piping, ventilating and air-conditioning for Airport Terminal, DALLAS, TEX. City, City Hall, Main and Harwood Sts., Dallas, Tex. Bids June 7, CD 6/21, under LB;

Fischbach & Moore of Texas, Inc., 1717 Baylor St., Dallas, CA $530,618, electrical work (Dallas, Tex.)

† **Lawless & Alford,** Box 600, Austin, Tex., LB $825,705, Lot 1, constr. five 2 story, 16,880 sq. ft. cadet dormitories, outside utilities, relocate 3 existing bldgs. with total floor area 22,000 sq. ft.; Harlingen Air Force Base, ENG-41-243-55-73, HARLINGEN, TEX. U. S. Eng., Box 1229, Galveston, Tex. Bids June 27.

BUILDINGS—LB & CA

▲ **C. H. Peterson Constr. Co.,** National Bldg., Minneapolis, Minn. CA $1,369,900. (8 bidders) general contract Edina-Morningside Junior high SCHOOL, EDINA (P. O. MINNEAPOLIS), MINN. Bd. Educ., M. S. Richards, clk., Edina, Minn. Bids June 29. CD 6/2.

▲ **Abell-Howe Co.,** 1114 Shaver Rd. N.E., Cedar Rapids, Iowa, CA $2,000,000 Town and Country SHOPPING CENTER, CEDAR RAPIDS, IOWA, Martin Buckshbaum, Marshalltown, Iowa.

▲ **Ready-Made Buildings, Inc.,** Joplin, Mo. Owner Builds. $1,000,000. 75 DWELLINGS in vicinity of 20 and Iowa Ave., JOPLIN, MO.

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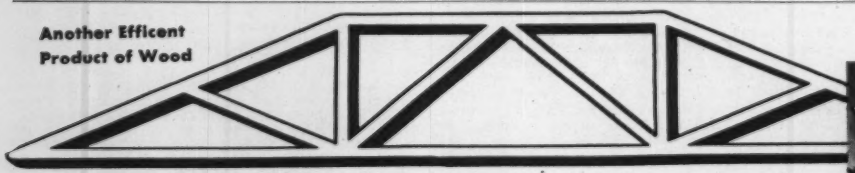

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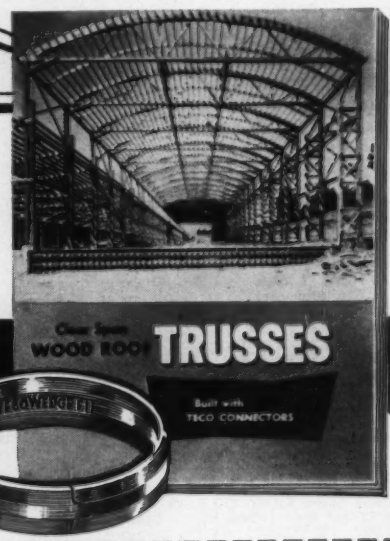

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▲† **McCarthy Bros. Constr. Co.**, 4903 Delmar Blvd., St. Louis 8, Mo. CA **$3,488,696.** Schedule 2, rehabilitation, modification of No. 2 HAZARDOUS AREA St. Louis Ordnance Plant, vicinity of 4300 Goodfellow Blvd., incl. general rehabilitation of bldgs. constr. new masonry and frame bldgs., facilities, Inv. 23-083-55-86, ST. LOUIS, MO. U. S. Eng., 601 Davidson Bldg., 10 E. 17 St., Kansas City 8, Mo. Bids June 28, awarded July 1;
MacDonald Constr. Co., 1310 S. Grand Blvd., St. Louis 4, Mo. CA **$341,295.** Schedule 1 (St. Louis, Mo.).

▲ **Joseph A. McNeil Co., Inc.**, 3115 W. Mission Rd., Alhambra, Calif. CA Est. **$2,000,000**; constr. group bldgs. incl. MONASTERY, SEMINARY, RETREAT HOUSE, for laymen, PRIVATE and PUBLIC CHAPELS, on 468 acre tract on Boone's Lick Rd., 1 mi. from U. S. No. 40, WARRENTON, MO. Passionist Fathers, Very Rev. Neil Parsons, provincial for Western U. S., 7101 Natural Bridge Rd., Normandy 21, Mo. CD 11/30.

▲ **Willard Realty Co.**, 4102 Farnam St., Omaha, Neb. Owner Builds. **$1,000,000.** HOUSING, vicinity 60 and Bancroft Sts., OMAHA, NEB.

Martin K. Eby Constr. Co., 610 N. Main St., Wichita, Kan. LB **$966,731.** general contract ANIMAL INDUSTRIES BLDG. at Kansas State College, MANHATTAN, KAN. State Dpt. Admin., State House, Topeka, Kan. Bids June 15. CD 6/1.

▲ **Swenson Constr. Co.**, 3305 Terrace St., Kansas City, Mo. CA Est. **$2,500,000.** WAREHOUSE, MERRIAM, KAN. Western Electric Co., 195 Broadway, New York, N. Y. CD 4/25.

▲ **Manhattan Constr Co.**, 1804 Classen St., Oklahoma City, Okla., CA **$1,095,000,** est. $1,100,000. CHURCH SANCTUARY, OKLAHOMA CITY, OKLA. St. Luke's M. E. Church, 1516 N. Harvey St., Oklahoma City, Okla. Bids June 14, awarded June 28. CD 6/2.

▲ **L. E. Smith Constr. Co.**, 4929 E. 16 St., Tulsa, Okla. CA **$1,648,544,** est. $1,750,000. Edison Senior HIGH SCHOOL, TULSA, OKLA. Bd. Educ., 410 S. Cincinnati St., Tulsa, Okla. Bids June 2. CD 5/10.

▲ **Butler Bros.**, Ervay and Young Sts., Dallas, Tex. Own Forces. **$1,100,000.** WAREHOUSING, DALLAS, TEX. CD 11/8.

▲ **Cothrum-Murray Co., Inc.**, c/o W. H. Cothrum, 2116 N. Field St., Dallas, Tex. Own Forces. **$10,000,000.** 10-acre SHOPPING CENTER, Garland Rd. and Jupiter Lane, DALLAS, TEX. CD 6/15.

Southwestern Constr. Co., Box 1204, Houston, Tex., CA **$824,053,** DORMITORIES, GALVESTON, TEX. University of Texas, c/o Bd. Regents, Main Admin. Bldg., Austin, Tex. Bids June 21. CD 6/28, under LB.

▲ **Robert H. Smith & Co.**, 1915 Kolfahl St., Houston, Tex., CA **$1,205,000.** co-educational HIGH SCHOOL and CONVENT, 90,000 sq. ft., concrete frame and steel portions, HOUSTON, TEX. Our Lady of Mt. Carmel Parish, 6710 Whitefriars St., Houston, Tex. Bids May 5. CD 5/18, under LB.

▲ **Rob. E. McKee, Gen. Contr., Inc.**, Box 562, El Paso, Tex., CA **$6,775,000,** HOSPITAL, PUEBLO, COLO., St. Josephs Sisters of Charity, Pueblo, Colo. CD 6/30, under LB.

FAR WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES

July 27 California — July 27 California

BUILDINGS—BA

▲ **Calif., Los Angeles**—SCHOOL—BA 7/29—Bd. Educ., 1425 S. San Pedro St., Narbonne High School, 247th St., and Western Ave. $1,500,000 Daniel, Mann, Johnson, Mendenhall, 4201 Sunset Blvd., engr. CD 4/29.

HEAVY CONSTRUCTION—LB & CA

▲† **N. H. Golden Constr. Co.**, 3485 Noel St., San Diego, Calif., CA **$2,338,000,** Hangar No. 2 and extend utilities at Naval Air Station, NOY 89081, Spec. 47972, MIRAMAR, CALIF., 11th Naval Dist., Dpt. Navy, San Diego, Calif. CD 6/30, under LB.

▲† **D. M. Drake Co. & G. A. Fuller Co.**, 1600 N. W. Savier St., Portland, Ore., LB **$1,218,000,** est. $1,000,000. (2 bidders) constr. addnl. ramp space, adjacent to B-52 flight test center, Larson Air Force Base, MOSES LAKE, WASH. Boeing Airplane Co., 7755 E. Marginal Way, Seattle 4, Wash. Bids June 30. CD 6/14.

▲† **J. I. Barnes Constr. Co.**, Central Bldg., Seattle, Wash., CA **$2,830,800,** 242x490 ft. steel frame aircraft maintenance hangar, Ault Field, Spec. 44447, WHIDBEY ISLAND, WASH. P. Wks. Officer, 13th Naval Dist., 1611 W. Wheeler St., Seattle, Wash. Bids June 27, awarded June 29. CD 7/1 under LB.

▲ **CALIFORNIA**—State Div. Hys., 1120 N. St., Sacramento,

Calif.—Daley Corp., Mission Valley at Ward Rd., San Diego, Calif., CA **$768,038,** grading, surf., 7.8 mi. constr. 4 bridges, relocating and reconstr. imprvt. on Sign Rte 75, San Diego Co.;

Calif.—W. F. Maxwell and Hermreck & Easter, 634 S. Western Ave., Los Angeles, Calif., CA **$1,736,751,** grading, paving 2.4 mi., constr. ramps and frontage roads, eight rein.-con. bridges U. S. 70-99, San Bernardino Co.;

Calif.—Guy F. Atkinson Co., 10 W. Orange Ave., South San Francisco, Calif., CA **$1,736,022,** grading, surf. approx. 4.1 mi., constr. 4 bridges to provide four-

(Continued on page 94)

BAND FRICTION HOISTS

Electric, Gas or Steam Drive

- Reversible for wear
- Non-burn lining
- "Face forward" friction & break levers
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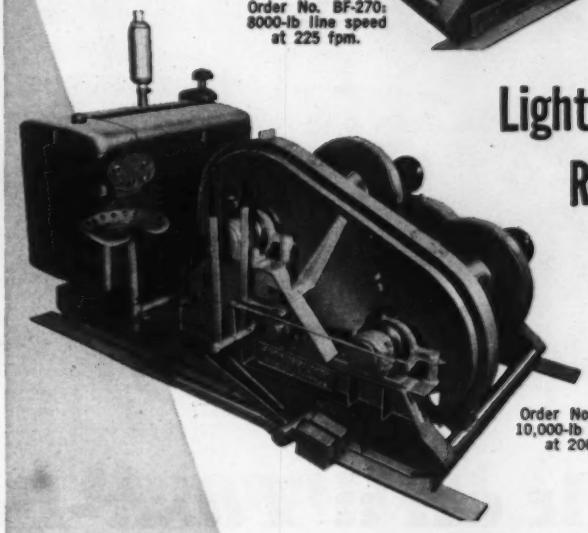

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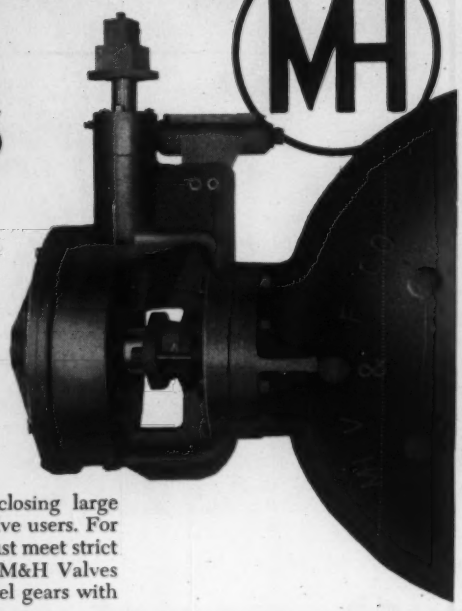

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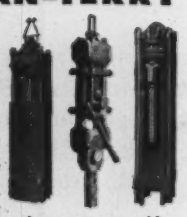

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Dept. E, Scranton 2, Penna.

(Continued from page 91)

lane divided hy. in and near Ventura on U. S. 399, Ventura Co. Grand total $4,240,811. Bids June 23, awarded June 30. CD 5/31.

▲† **Mattich Bros.**, Box 390, Colton, Calif., LB $1,633,553, parking apron and stabilizing taxiway shoulders, Norton Air Force Base, ENG-04-353-55-169, SAN BERNARDINO, CALIF. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids June 29. CD 6/10.

▲† **L. C. Anderson**, 3040 Hancock St., San Diego, Calif., LB $1,402,057, addnl. facilities, Increment 1, NOY 86732, Spec. 45843, SAN NICHOLAS ISLAND, CALIF. 11th Naval Dist., Dpt. Navy, San Diego, Calif. Bids June 29. CD 6/21.

BUILDINGS—LB & CA

▲ **Macomber-Brunzell Co.**, 8818 Melrose Ave., Los Angeles, Calif., CA $1,783,760, 200-room HOTEL, RENO, NEV. Blitz & Mueller, c/o Frank W. Green, archt., 5255 Lakeside Dr., Reno, Nev. CD 6/10, under LB.

Lewis Constr. Co., 1711 Jackson St., Seattle, Wash. LB $821,000 (7 bidders) rein.-con. frame, Junior HIGH SCHOOL, McLoughlin Heights area, VANCOUVER, WASH. School District 37, Vancouver, Wash. Bids June 26. CD 6/8.

▲† **R. J. Daum Constr. Co.**, 6803 West Blvd., Inglewood, Calif., LB $1,524,038, Earl Warren HIGH SCHOOL, DOWNEY, CALIF. Downey Union High School Dist., Downey, Calif. Bids June 28. CD 6/7.

▲ **Braddock, Logan & Valley**, 1901 McArthur Blvd., San Leaudro, Calif., Owner Builds $4,800,000. 400 HOMES subdivision, FRESNO, CALIF.

▲ **Williams & Burrows, Inc.**, 600 Harbor Dr., Belmont, Calif., CA $1,169,400. Herbert Hoover JUNIOR HIGH SCHOOL, Lakewood, LONG BEACH, CALIF. Long Beach Bd. Educ., 715 Locust Ave., Long Beach, Calif. Bids June 24. CD 6/30 under LB.

▲ **D. & E. Corp.**, 9806 W. Olympic Blvd., Beverly Hills, Calif., CA $1,173,000, 183 frame, stucco DWELLINGS, Graystone Ave., Crossdale Ave., NORWALK, CALIF. Guide Building Co., Revenue Building Co. Coral Building Co., Crater Building Co., Husky Building Co., 9806 W. Olympic Blvd., Beverly Hills, Calif.

▲ **Howard J. White**, 44 Encina Ave., Palo Alto, Calif., CA $1,687,620 (9 bidders) 122,144 sq. ft. frame, stucco SCHOOL, PALO ALTO, CALIF. Palo Alto Unified School Dist., Box 450, Palo Alto, Calif. CD 10/7.

▲† **M. H. Golden Constr. Co.**, 3485 Noell St., San Diego, Calif., LB $1,567,500, seven recruit BARRACKS, Naval Training Center, NOY 89069, Spec. 47960, SAN DIEGO, CALIF. 11th Naval Dist., Dpt. Navy, San Diego, Calif. Bids June 29. CD 6/15.

▲ **Diablo Builders**, Los Juntas Way, Concord, Calif., Owner Builds. $3,027,500, 173 HOME subdivision, WALNUT CREEK, CALIF.

CANADA

BUILDINGS—BA

Newfoundland, Gander—HOUSING—BA 7/19—Central Mortgage & Housing Corp., 1032 Gottingen St., Halifax, N. S., housing program, 116 housing units in 81 bldgs. $925,000. Plans deposit $100. C. F. Emms, c/o owner, engr. CD 2/18/49.

HEAVY CONSTRUCTION—LB & CA

▲ **ONTARIO**—Dpt. Hys., Parliament Bldgs., Toronto, Ont.—**Beamish Constr. Co. Ltd.**, 2460 Dufferin St., Toronto, Ont., CA $295,497, grading, culvert constr., paving Hys. 12 and 7A from Brooklin curve to Manchester and eastward;

Ont.—**Harvey Constr. Co. Ltd.**, R.R. 1, Kingston, Ont. CA $715,761, grading, culverts 9 mi. of No. 401 and No. 15 Hys. in Kingston area;

Ont.—**King Paving Co. Ltd.**, Sixth Line, Oakville, Ont. CA $778,242, granular base, hot mix paving Hy. 6 from Ryckmans Corners to Mount Hope, Grand total $1,789,500. Awarded June 30. CD 4/27/44.

BUILDINGS—LB & CA

▲ **H. K. Ferguson Co. of Canada, Ltd.**, 1783 E. 11 St., Cleveland, O. CA Est. $11,000,000. design and construct chlorine-caustic soda PLANT, NORTH VANCOUVER, B. C. Hooker Chemicals (B.C.) Ltd., North Vancouver, B. C.

Deschamps & Belanger, Ltd., 6931 Cote des Neiges Rd., Montreal, Que., CA $800,000. 4 story, bsmnt., L-shaped, 60x183 ft. and 45x86 ft., rein.-con. fdn. and frame, brick and stone walls CONVENT addn., VALLEYFIELD, QUE. Congregation du Tres Saint Nom de Jesus et Marie, 27 Eglise St., Valleyfield, Que. Bids June 8, awarded June 20. CD 6/8.

ALASKA

HEAVY CONSTRUCTION—LB & CA

▲† **Green Constr. Co.**, and S. Birch & Sons, Securities Bldg., Seattle 1, Wash., CA $2,872,615, est. $2,573,808. operations bldg., central steam and power plant, area warehouse, two base warehouses, headquarters bldg., two special ordnance structures in ordnance storage area, Inv. 55-66, Eielson Air Force Base, ALASKA. U. S. Eng., Arcade Bldg., Seattle 1, Wash. Bids June 28. CD 7/1, under LB.

▲ **Mannix International & Stolte International**, 8451 S. Leandro St., Oakland 5, Calif., CA $3,369,185, docks, SEWARD, ALASKA. The Alaska R. R., I. P. Cook, ch. engr., Anchorage, Alaska.

▲† **J. A. Jones Constr. Co.**, Medical Arts Bldg., Seattle 4, Wash., CA $3,972,930 (6 bidders) composite bldg., paint and oil storage bldg., air-to-ground bldg., segregated magazine storage bldg., airstrip work, etc. for Air Force Station, Inv. 55-31, SITKINAK ISLAND, ALASKA. U. S. Eng., 4735 E. Marginal Way, Seattle, Wash. Bids June 23. CD 6/27, under LB.

(Proposal Advertisements see pp. 108 to 111)

Field Assembly of Aeroquip Hose Lines Cuts Downtime for Wm. J. Muehlenbeck

With a small supply of Aeroquip hose and fittings in the service truck, Mechanic Cliff Scarborough can make new hose lines right in the field.

This Aeroquip *SOCKETLESS* replacement line was made in a matter of minutes with no tools except a pocket knife for cutting the hose.

Wm. J. Muehlenbeck of Saginaw, Michigan keeps a mixed fleet of earthmovers, scrapers and graders on the job with a minimum of downtime. Broken hose lines are replaced, on all makes of equipment, with new Aeroquip assemblies made *right in the field!* Aeroquip wire braid hose and reusable fittings fill the bill for all hydraulic and heavy-duty lines. For fuel, oil and air lines, Cliff Scarborough, Muehlenbeck mechanic likes Aeroquip's new *SOCKETLESS* fittings and hose that assemble extra fast by just pushing the hose on the fittings. You'll save time, too, by replacing broken hose lines right on the spot. Get the complete story from your distributor, or write us.

JUST PUSH THE HOSE ON — IT STAYS ON

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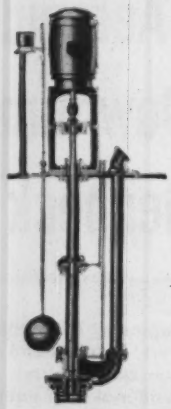
YEOMANS

Series 3000



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UNIT PRICES

Metalwork Low on Delaware Bridge Superstructure

Delaware River Port Authority awarded to New York Shipbuilding Corp. at $3.7 million, the stringer spans superstructure for the Gloucester approaches to the Delaware River bridge. The lowest of three bids totaled $508,460 below second, $429,000 low on metalwork alone. This highway bridge connects Packer Ave., Philadelphia, Pa. to Gloucester, N. J.

Port Authority chief engineer is D. M. Kramer; executive director, J. K. Costello. Consulting engineers are Modjeski & Masters–Ammann & Whitney, Philadelphia.

The contract calls for furnishing and erecting structural steel for the approach stringer spans superstructure, reinforced concrete roadway slabs ready for bituminous paving, sidewalks, handrails and deck drainage. The superstructure consists of 61 stringer spans of varying widths and lengths totaling 3,767 ft, from Pier G9 on Newton Creek's east bank to the North-South freeway.

Wage rates in the Philadelphia area are $2.325 for common labor, $3.63 for structural iron workers.

1C New York Shipbuilding Corp., Camden, N. J. $3,758,514
2 Bethlehem Steel Corp., Bethlehem, Pa. 4,266,974
3 American Bridge Div., U. S. Steel Corp., Pittsburgh, Pa. 4,351,484

Completion 290 calendar days; liq damages $3,000/day

Bids: 6-9-55 Items (in place)	Unit	Quantity	Unit Prices 1C	2
Str steel & painting	lb	14,300,000	$0.183	$0.213
Aluminum handrail	lf	8,750	25.66	31.00
Deck drainage system	ls	.....	31,000	44,350
Galv WI troughs, type A	lf	1,730	13.50	25.30
B	lf	200	13.00	25.30
Roadway slab & sidewalk: concrete, class RS*	cy	6,530	85.79	79.00
reinforcing steel	lb	2,150,000	0.1395	0.1585

* Cement content 6.5 bags (94 lbs each) per cy, water 5.5 gal/bag cmt, consistency range in slump 1–3" crushed stone 38–43%

Nebraska Air Base Theater And Post Exchanges

The Corps of Engineers, Omaha, Neb., district awarded Korshoj Construction Co. at $593,617, a theater building and two post exchanges at Lincoln Air Force Base. Col. T. J. Hayes is Army District Engineer.

The contract price includes area grading, paving, curbs, and utilities.

Buildings are concrete block. Including excavation and backfill and utilities to the 5-ft line, they will run $13.97 per sq ft for the theater and $11.57 and $8.07 for the post exchanges.

The theater price also includes building entrance ramps, retaining walls, stairwells, pipe railing at exterior ramps, and electrical service entrances. Theater dimensions are to be 80x168 ft; one post exchange is 48x116 ft, the other, 60x144 ft with an 80x84-ft wing.

Korshoj, lowest of three bidders, was 0.3% above the engineer's estimate.

Bidders include:

1C Korshoj Const. Co., Blair, Neb. $593,617*
2 Olson Const. Co., Lincoln, Neb. 608,775*
3 Larsen Brothers, Council Bluffs, Iowa 635,333*
EE Corps of Engineers, Omaha, Neb. incl profit 591,500*

Completion: theater & large PX 400 days, small PX 180 days

Bids: 4-22-55 Items	Unit	Quantity	Unit Prices 1C	2
Auditorium theatre, 80'x 168'	ls	.....	$185,000	$205,279
Post exchge, 2,500-man	ls	.....	64,400	69,588
15,000-man	ls	.....	124,000	129,954
Steam dist syst, incl ext into bldgs, conn to bldg services, removals & relocations	ls	.....	10,255	7,010
Elec dist syst incl conn to bldg services, removals & relocations	ls	.....	8,020	5,212
Water pipe line, 2"	lf	115	2.00	1.84
2½"	lf	242	2.50	2.75
3"	lf	42	2.52	2.85
4"	lf	126	2.80	3.15
6"	lf	101	4.00	3.75
Tapping machine valve, sleeve, valve box: 6"x6"	ea	2	175.00	178.00
6"x3"	ea	2	140.00	135.00
6"x2"	ea	1	120.00	127.00
Tpg mach vlve, sleeve, post indicator	ea	1	275.00	234.00
Fire hydrants	ea	1	225.00	252.00
Relocating fire hydrants	ea	6	98.00	225.00
Gate vlves & vlve boxes	ea	1	62.00	109.20
Sewer P & bldg drain lines, 6" VCP	lf	333	2.65	2.25
8" VCP	lf	270	4.00	2.87
Manholes, sanitary sewer & bldg drain lines: 6'0" depth	ea	3	250.00	300.00
overdepth	vf	14	32.15	35.00
Adj sewer MH to grade	ea	6	50.00	50.00
Storm drain line, alt a: 15" RCP	lf	565	5.00	3.66 *
18"	lf	1,160	6.00	4.71
24"	lf	614	7.85	7.08
30" CMP	lf	20	10.55	10.90
30" RCP	lf	418	11.60	9.98
38" CMP	lf	70	14.80	17.10
Storm drain line alt b: 15" RCP	lf	84	5.35	3.66
CMP	lf	305	5.48	5.75
18" CMP	lf	543	6.10	6.25
24" CMP	lf	814	8.10	7.65
30" CMP	lf	754	9.40	8.90
38" CMP	lf	347	14.00	13.90
Conc pipe encasement	cy	30	28.75	33.00
Conn to existing manhole	ea	2	20.00	20.00
Gas lines, 1¼"	lf	280	1.30	0.94
1½"	lf	645	1.75	0.99
Plug vlv w/vlv box 1¼"	ea	2	40.00	40.57
1½"	ea	1	45.00	45.57
Pavement, rem & replace	sy	30	8.00	8.00
Inlets, curb	ea	18	230.00	235.00
double curb	ea	6	347.00	350.00
grate inlet	ea	6	220.00	210.00
Modification culv pipe	ls	.....	250.00	175.00
Flap gates, 36"	ea	1	163.00	175.00
Modif MH inlets, grate	ea	3	195.00	200.00
grate MH	ea	4	215.00	210.00
MH 6' depth, storm drn	ea	7	325.00	320.00
overdepth, storm drn	vf	20	40.00	30.00
Rem & replace riprap	ls	.....	450.00	675.00
Rem culverts	lf	416	1.75	2.00
conc footgs & slabs	ls	.....	1,600	1,900
flexible pavement	sy	16,820	0.25	0.25
miscellaneous	ls	.....	450.00	700.00
Excavation	cy	1,500	0.60	0.55
Borrow	cy	21,000	0.77	0.75
Spot subgrade reinf	cy	20	7.50	7.20
Base course	t	11,940	5.17	4.95
Bituminous prime coat	gal	8,170	0.275	0.25
tack coat	gal	100	0.33	0.30
surface crse	t	2,058	10.20	9.25
materials	gal	24,660	0.17	0.16
Concrete sidewalk	sf	17,835	0.40	0.45
Double purpose walk	sf	2,390	0.55	0.60
Curb & gutter & lip c&g	lf	10,411	2.50	2.25
Straight curb	lf	90	2.30	2.40
Topsoiling	ac	10	322.00	300.00
Temporary seeding	ac	15	46.00	50.00
Temporary protection	ac	15	70.00	70.00
Permanent seeding	ac	15	230.00	210.00
Sodding	sy	3,685	0.55	0.50

* On basis alternate a (Storm drainage)

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- in reinforced concrete structures, housing projects

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TROPICAL PLAYLAND—An increase in tourists seems to be laying foundations of a building boom at Waikiki Beach. Honolulu is at bottom left of picture, and Diamond Head at top. Kaiser's proposed island is off picture at right.

Kaiser Bets on Waikiki Boom

Henry J. Kaiser, that fabulous industrialist, has sensed that a resort boom is coming at Waikiki Beach, which is to Honolulu what Miami Beach is to Miami. And he wants in on it.

The Hawaiian resort is reaping the benefits of lower air fares and a consequent increase in tourists that has already started a hotel-building boom at Waikiki (picture, above). A year ago, there were only 2,000 hotel rooms at the resort. Now there are 3,000—and several hundred more under construction, and quite a lot of hotel and motel building is going on in other parts of Hawaii.

Kaiser says he will add 2,000 more before long on land he has already acquired, at a cost of around $20 million. Kaiser has a long-range plan to dwarf even this proposal, by dredging and filling in an offshore reef to build 65 more acres of resort land at a cost of $55 million or more. Enabling legislation already has passed the territorial legislature and has gone to Congress for concurrence.

• **Not again**—Kaiser says he has made two mistakes in his lifetime—one when he failed to invest in Florida before it boomed, the other when he failed to invest in Palm Springs, Califoria. "I don't see why I should make a third," he told newspapermen the other day when he announced his plans.

Three hotels of 300 or more rooms each, costing about $10 million altogether, are providing the bulk of this year's expansion. They are: the Waikiki Biltmore, the Princess Kaiulani, and the Reef. All are of concrete or concrete and steel construction. Owners are, respectively: Joseph Greenbach, a California realtor who is investing in Hawaii; Matson Navigation Co., which had a virtual monopoly of big beach hotels until recently; and Roy Kelley, Hawaii's largest independent hotel owner.

Kaiser promises to be a Big Fourth. And Clinton Murchison Jr. of Texas, in association with Paul Trousdale, of California, may be a Big Fifth.

Murchison and Trousdale have acquired land in the heart of Waikiki on which they are committed to spend $10 million in the next 10 years. They will hold off on hotel building, till they see how Kaiser and the others do. At present, they'll devote their 16-acre tract principally to a low-level $1.5-million International Village, for exotic shops and restaurants.

• **New code**—To cope with the rush of building, the city is: (1) Drafting a new building code; (2) ordering a

special study on regulation of building heights; (3) drafting new ordinances as to the amount of off-street parking hotel and apartment builders must provide; (4) pushing ahead to carry out recommendations of a traffic plan for re-routing Waikiki traffic and diverting as much through traffic as possible away from Waikiki. One phase of this plan is to re-route a section of Waikiki's "main drag" Kalakaua Ave.—to provide more public park and hotel area between it and the beach. A $5.3-million bond issue has been approved.

• **Three big ones**—Kaiser plans three 500-room, 16-story hotels on his existing 16-acre tract. One would start "as soon as possible," the others later. He also plans 500 other rooms in lower and cottage-type buildings, some of which are already in progress. And he plans an auditorium to attract convention business. Any one of Kaiser's hotels would be bigger than any of the existing hotels. The new Biltmore and Kaulani Hotels are each 11 stories. Before this year, the highest building in either Honolulu or Waikiki had only six stories.

NSPE Asks for Equal Tax Aid To Private Retirement Plans

The National Society of Professional Engineers has urged the House Ways and Means Committee to approve pending legislation that would give fairer tax benefits to self-employed people who want to set up their own individual retirement plans.

In testimony before the committee, NSPE Executive Director Paul Robbins stated that present tax rates do not leave the average self-employed professional "enough to cover living expenses and a residue for the relatively high payments which are required for an acceptable private pension plan."

In addition, Robinson pointed out that salaried employes receive substantial tax benefits under existing law, that do not apply to self-employed people.

Chicago Industrial Plans Hit Postwar High in June

Announced plans to construct industrial plants in the six-county Chicago metropolitan area hit a postwar high last month, according to the Chicago Association of Commerce & Industry. The total was $108 million, topped only by April 1942.

This huge June figure brings the total for the first half of 1955 to $198 million, the biggest for a first half since 1951, when the total was $220 million.

Toll Bond Trouble

Underwriters get stuck with latest pike issues

It's now clear that Wall Street investment houses got too enthusiastic when they bid on the recent Florida and Texas Turnpike issues—the first that have come along for many months. Last week the syndicates that won these two issues by offering generous prices for the bonds—and thus low interest costs—broke up.

That means they stopped supporting the market for these bonds at the issue price and let them decline several points to their real market level. Reports are that a majority of the members in the Texas syndicate lost money on the deal, and that the same happened to some members of the Florida syndicate who held their bonds off the market expecting a rise. There were not enough buyers interested in these low yields. Interest cost to the Texas Turnpike Authority was at an all-time low of 2.93%.

• **Bloom is off the rose**—What happened in Wall Street may have an important bearing on future construction. For apparently the glamor has worn off turnpike bonds. And some turnpike dream projects may well remain in that stage for some time. Certainly investment bankers are going to be more careful about their bids on other municipal bonds that finance public works and this means that interest costs to the borrowers—the clients of construction—are going to be higher.

This is no overnight development. It is part of the gradual tightening of interest rates that has been going on for many months. As the business boom picks up speed, there are more demands for money, thus boosting the price of money. At the same time, the Federal Reserve Board has been gently edging its weight in the direction of greater tightness in the money supply.

• **Treasury helps tighten money**—The new Treasury financing announced last week is going to push this tightness in the bond and mortgage markets a bit further along. In a $2¾ billion borrowing, the Treasury offered $750 million of 40-year bonds. These bonds are bought by the same kind of investors who buy municipal bonds (including turnpike issues) and who buy mortgages. In this league, $750 million isn't much. There will still be plenty of money available to buy municipals and mortgages. But the Treasury's action will make long-term money just a little harder to find.

This week's offering of $125 million of state-guaranteed bonds by the New York State Thruway Authority should add something more to the story of tightening money. Next week, about $121 million of housing authority bonds are due for offering to the market.

Who Took Those Boxcars?

In Oregon this week, a governor's committee started to investigate what has happened to lumber boxcars. Southern Pacific's Siskiyou Division, sole rail carrier serving four counties of southern Oregon that are heavy lumber producers, is still having a tough time furnishing freight cars to move lumber eastward. Oregon Public Utilities Commissioner Charles H. Heltzel reported that during the week ended June 25 the railroad filled only 69% of requests for lumber shipments from this particular division.

Southern Pacific already has explained that an unexpected upsurge of freight-car loadings in mid-summer has caught it unprepared and worse off than is normal for this time of the year.

The Steel Boosts Came Along: They're Higher Than Expected

As predicted by ENR before wage talks began in the steel industry, the cost of steel used in construction is going up. Last week, following a 15 cents per hour wage boost for steel workers, U.S. Steel Corp. increased the base price of its products by an average of $7.35 per ton, about 5.8%.

Steel officials emphasized that the boost took into account not only the higher wages, but "steadily mounting costs of purchased goods and services, of state and local taxes, and of new construction." Thus they were higher than was generally expected. There were no increases in charges for extras.

By the end of last week other major steel producers had indicated they were boosting prices in line with the No 1 producer.

"The corporation" boosted standard structural shapes from $85 per ton to $92, while high-strength "Cor-Ten" structurals advanced the same dollar amount to $135 and "Man-Ten" structurals to $112. Concrete reinforcing bars also rose $7 a ton, to $93. Plates advanced $5.50 to $90 a ton, and high-strength plates by the same amount. Alloy bar and structural shapes advanced $9 to $113 per ton.

Galvanized sheets rose $8 to a new price of $117 for the regular sheets and $172 for high-strength. Boosts on pipe and tubular products ranged all the way from $8 a ton to $16.75.

(B&F continued on page 10)

How new principles in PAYLOADER® design mean greater production at lower costs with these new models

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(*Continued from page 99*)

These price increases, which are partly caused by increases in the cost of construction, will themselves add to the cost of construction. This is a very good example of what economists mean when they talk about the "inflationary spiral". The construction industry, the No. 2 user of steel in the U. S., will pretty much have to pass on these price boosts to clients. The tough competition now prevailing in the industry has shaved profit margins close to the vanishing point for many firms.

Private Lender Explains Its Long-Term Export Credit Plan

Exporters of construction equipment and other capital goods now have another source of long-term credit with which to offer credit terms to foreign customers on a basis competitive with foreign manufacturers. The new lender is American Overseas Finance Corp., a private institution organized this spring by five big U.S. commercial banks. Last week, AOFC gave out details on how it will work. It will operate in the same field as the Export-Import Bank, which has set up lines of credit totaling $145 million since its similar program started last fall.

The new private lender will finance sales for U.S. manufacturers, exporters, and finance companies for terms up five years and perhaps longer in special cases. It will finance up to 60% of the sales price. AOFC will require the foreign buyer to put up at least 20% of the sales price in cash or its equivalent. That means the U.S. seller will finance at least 20% of the sale price himself.

• **How it works**—Here's how the loan will work: Suppose a manufacturer sells $125,000 of construction equipment to a foreign buyer whose credit is acceptable to AOFC. The foreign importer puts up $25,000, leaving $100,000 to be financed. Of this, AOFC pays over $75,000 to the U.S. exporter, and issues him a participation certificate in the loan for $25,000. The foreign debtor pays off the loan in installments (at least semi-annually). AOFC collects all these payments, along with all interest on the face amount of the loan, until it has recovered its $75,000. It continues to collect all further payments, turning them over to the exporter and deducting a ⅛% collection fee.

In some cases, AOFC will make advance commitments to exporters on deals which have not reached a final stage—for instance, prospective sales subject to public or private bids.

It will usually help exporters to check with AOFC on financing possibilities in the early stages of a proposed sale. If it looks as if AOFC might be able to help, the exporter can then develop final sale terms so as to fit in with AOFC procedures.

Business Briefs . . .

• **New toll road authorized**—The Washington State Toll Bridge Authority plans to sell $227 million in bonds to finance a 55-mi Tacoma-Seattle-Everett toll road. Date depends on when and whether a test case on legality of the enabling act is finished satisfactorily. Final court action is hoped for by Jan. 1.

• **California bridges**—California Toll Bridge Authority will call for construction bids in October on a new bridge across Carquinez Strait near the entrance to San Pablo Bay. A bond issue for about $43 million will be offered soon after.

• **Plywood companies** must start research and market development programs or risk "eventual economic collapse". That's the warning members of the Douglas Fir Plywood Assn. got from Managing Director W. E. Difford at their recent convention. Difford said the industry must find new products utilizing lower grade veneer.

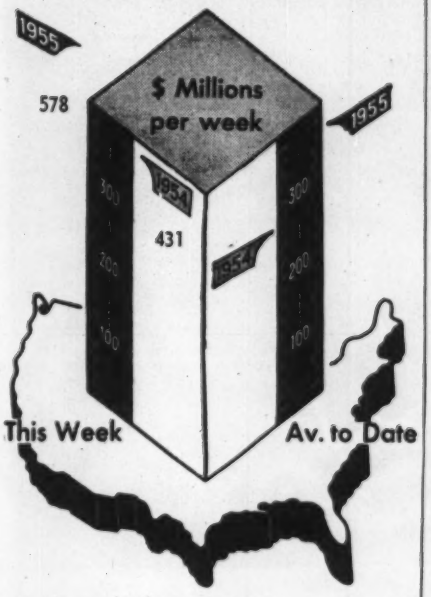
• **Churches** will be built in record dollar and physical volume this year, according to the National Lumber Manufacturers Assn. It estimates that $700 million worth will go up this year. About one-fourth will be modern in design, about one-fourth will follow traditional styles, according to NLMA. The rest will be designed to preserve traditional effects in simplified contemporary forms. Three out of four will have roofs of engineered timber construction, usually featuring glued laminated wood, says NLMA.

• **Truck tolls boosted**—Pennsylvania Turnpike has boosted tolls for most popular truck types by 33%, following a recent state law increasing truck weight limits on state highways. A trucker spokesman said it was possible some firms would now find it better to use only short portions of the turnpike.

• **Structural steel bookings** in May were 304,000 tons, highest in two years. The backlog was 1.6 million tons, compared with about 1.5 million tons a year before.

Activity This Week

As reported to ENR (In millions of dollars)



Amount of contracts let

	This Week	Cumulative 28 wks 1955	1954	% chge
Federal	$73.7	$1,048.7	$709.3	+48
State and Municipal	132.8	2,854.6	2,562.2	+11
Total public	206.5	3,903.3	3,271.5	+19
Total private	371.9	6,478.1	4,285.6	+51
U. S. Total	$578.4	$10,381.4	$7,557.1	+37

Contracts by type of work

Waterworks	$5.1	$142.7	$122.6	+16
Sewerage	6.8	214.3	207.8	+3
Bridges	11.9	250.0	239.6	+4
Highways	62.1	1,158.7	938.0	+24
Earthwork, Waterways	5.2	309.6	160.3	+93
Buildings:				
Public, excl. hsg.	51.9	945.8	968.1	—2
Housg., public	8.1	156.7	135.7	+15
Housg., private	133.3	3,661.7	2,367.6	+53
Commercial	44.6	960.9	698.7	+38
Industrial	112.5	1,456.8	1,004.1	+45
Unclassified	136.9	1,164.2	714.6	+63
Total	$578.4	$10,381.4	$7,557.1	+37

NOTE: Minimum size projects included are: Waterworks and waterways, $44,000; other public works, $73,000; industrial buildings, $93,000; other buildings, $344,000.

New capital for construction

(millions of dollars)

	Week of July 7 1955	Cumulative 27 wks 1955	% chge '54-'55
Corporate securities	$25.8	$1,799.7	+10
State and municipal:			
All except housing	99.3	2,333.4	—27
Housing	...	63.2	—6
Federal loans	14.7	70.6	+0.4
Federal aid	...	95.0	+73
Total non-federal	$139.8	$4,362.0	—13
Federal appropriations:			
In U. S.	$...	$118.8	+112
Outside U. S.	...	13.4	+191
Total new capital	$139.8	$4,494.2	—11

ENR cost and volume indexes, 1955

		Base years = 100 1913	1926	1949
Construction Cost	7/7	670.81	322.46	140.63
	6/30†	660.09	317.31	138.38
Building Cost	7/7	476.92	257.81	135.57
	6/30†	467.52	252.73	132.90
Volume	June	633	257	183
	May	731	297	211

†Official monthly index for July

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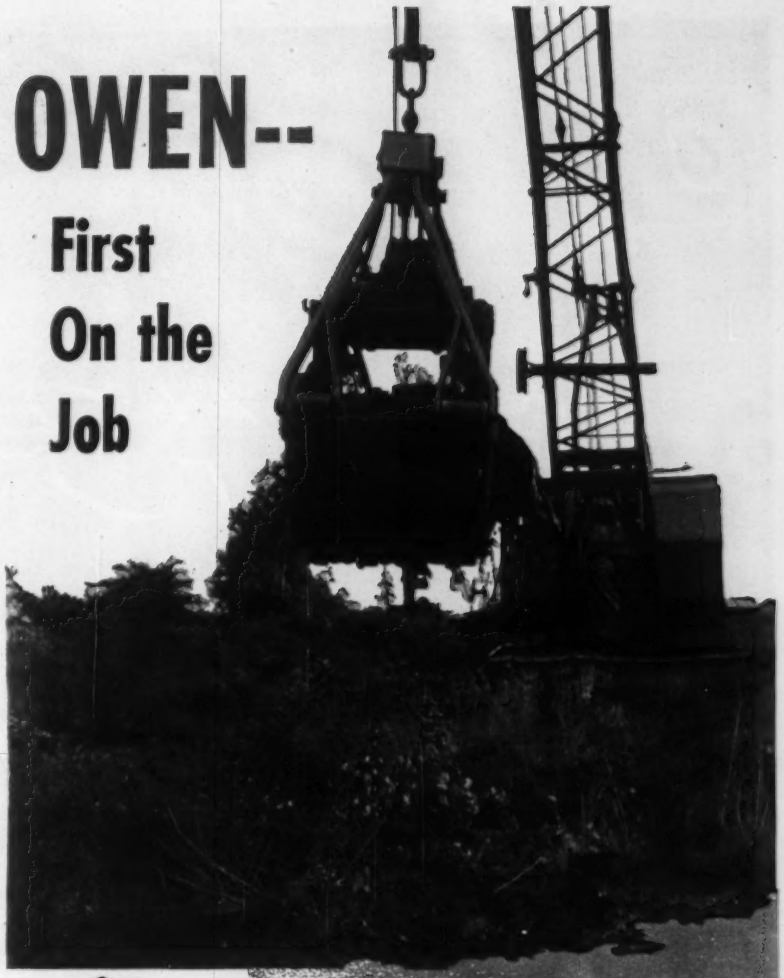

An Owen bucket takes the first bite for National Engineering & Contracting Company on the 55th Street intersection of Cleveland, Ohio's multi-million dollar freeway.

One of their many Owen buckets breaks ground for the Horwitz Co. of Cleveland, Ohio at the opening ceremonies of Ohio's 241 mile, 326 million dollar turnpike at Peninsula, Ohio.

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This machine, working on extension of the Maine turnpike, gave its owner several important advantages over conventional equipment.

One big benefit came from MARION air control. Operators say it conserves their strength, keeps them alert and fresh, and thus speeds production. It makes their job records look good!

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Firmer Demands

Longer contracts, bigger wage boosts characterize last stage negotiations

Firmer demands, bigger wage boosts and longer contracts have characterized many of the agreements reached in the final rounds of collective bargaining with the building trades.

While six of the New York City trades approved last week the two-year, 45-cent package agreement which had checked the threat of a major strike (ENR July 7, p. 80), unions in other areas were chalking up substantial gains. Some of them are spread over a three-year period, significantly promising a steady climb in building costs.

• **Longer contracts**—Carpenters in western Washington, for example, have negotiated a three-year contract with the Seattle Master Builders and the AGC. The new agreement grants them a wage increase of at least 34 cents during the life of the contract. On January 1, the first increase of 14 cents becomes effective. Further boosts of 10 cents each are scheduled for January 1 of the following years. In addition, the contract contains an escalator clause which provides for wage adjustments based on rises in the cost-of-living index. Approximately 15,000 carpenters are covered by the agreement. The present scale for journeymen is $2.66.

In contrast to this, AFL teamsters in Toledo, Ohio, get their biggest increase in the last instead of the first year. Under their new three-year contract, the wage boosts run 14, 10 and 10. The agreement ended a strike called June 14 by Local 20 against ten building supply firms, idling 3,000 construction workers.

• **Bigger gains**—In four northern California counties, 2,000 AFL plumbers and pipefitters received a package increase of 18½ cents in negotiations under the wage re-opening clause of their current two-year contract.

Wages were boosted 15 cents to $3.20 an hour; health and welfare benefits were raised 1 cent to 11 cents; and pension contributions were increased from 7½ cents to 10 cents. Next January 1, subsistance rates will be hiked from $7 to $9 a day.

The agreement was signed by the union's Local 38 and the Associated Plumbing Contractors of San Francisco, the Marin County Master Plumbers Assn., and the Mechanical Contractors of Northern California.

Meanwhile, the operating engineers, who began a series of work stoppages in mid-June on construction projects in 11 southern California counties, have been making peace with the four contractor groups with whom they negotiate—but pretty much on their own terms. The tentative agreement called for a one-year contract instead of a two-year one, and granted increases of 10 to 28 cents for various classifications, coming close to the 5% overall demand of the engineers. The increase will be paid in two installments—70% retroactive to June 27 and 30% effective Oct. 31.

AFL Unions Seek Contracts With Equipment Suppliers

AFL operating engineers and teamsters are making a coordinated drive to organize construction equipment suppliers in the Los Angeles, Calif., area.

Several of the larger firms have been approached by the two unions, seeking to negotiate contracts that would cover most shop employes except supervisory personnel. Four suppliers have been picketed.

At the request of six suppliers, the NLRB is conducting a hearing, now adjourned to July 15, to determine whether representation elections should be called. The employers deny that the unions have the support of anywhere near a majority of the employes and claim there is no basis for requesting negotiations.

Sheet Metal Workers Obtain First Denver Vacation Plan

The first paid vacation plan in Denver construction history was won by the AFL sheet metal workers in a two-year contract with the Sheet Metal and Warm Air Heating Contractors Assn. Under the plan, which became effective last week, employes will become eligible for a one-week vacation with pay after July 1, 1956.

Of particular significance is the administrative flexibility and simplicity of the plan. The employers' contributions of 7 cents an hour will be paid into special savings accounts in the name of each employe. When an employe gets a vacation, arranged with his current employer at a mutually convenient time, his account is released to him as his pay for the week.

Vacation contributions continue

(*Continued on page 107*)

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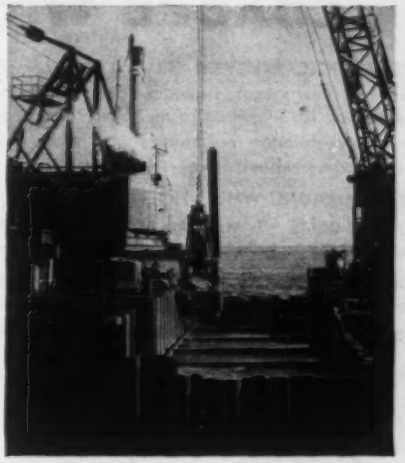

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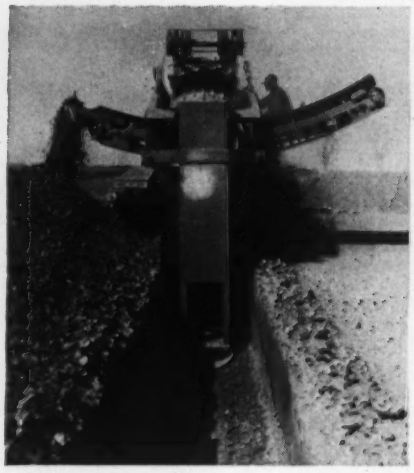

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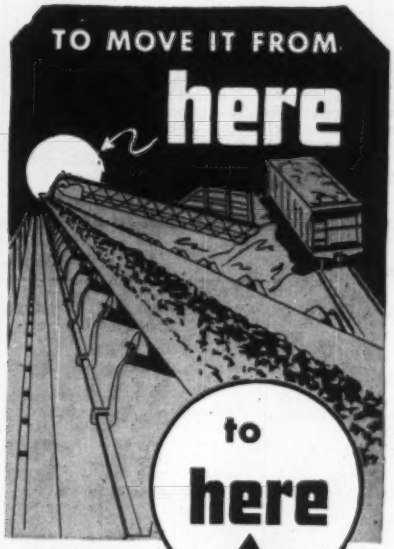

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without interruption as an employe moves from one employer to another within the Denver area. If he moves from the area, the funds to his credit in the vacation account are released to him—the same as any savings account.

The new contract also grants a wage boost of 8 cents an hour, effective Jan. 1, 1956. Before the increases were won, the existing scale was $2.95 an hour.

AFL-CIO No-Raiding Pact Completes Its First Year

The AFL and the CIO have added up the score achieved by their no-raiding agreement during the first year of its operation.

Total number of cases handled was 46. Half of them were initiated by AFL unions and half by members of the CIO. Twenty-eight were settled by mutual agreement. Only eight were submitted to the impartial umpire after attempts to mediate had failed. Ten cases were reported still in process.

The agreement, which became effective June 9, 1954 after ratification by 29 unions in the CIO and 65 in the AFL, is due to expire this year. Its extension for another two years is contemplated by the proposed constitution for the merged labor organization, scheduled for adoption in December. If the merger is effected, steps will be taken to incorporate this agreement with the CIO Organizational Dispute Agreement and the AFL Internal Disputes Plan into a combined no-raiding and jurisdictional disputes agreement.

Labor Briefs . . .

• **No contract, no work**—Construction workers in the Knoxville, Tenn., area, including many on atomic plant projects at Oak Ridge, went on strike July 1 after existing contracts expired. No picket lines were posted and many who deal directly with subcontractors remained at work. Some contractors entered into separate agreements and were able to keep their jobs manned.

• **When to picket**—The Supreme Courts of Arkansas and Wisconsin have handed down conflicting rulings on picketing during organizational drives. In Wisconsin, a state law prohibiting picketing where no labor dispute exists was ruled unconstitutional, while the court in Arkansas held that picketing which interferes with activity not directly involved in a labor dispute is illegal.

OFFICIAL PROPOSALS

Bids: July 27, 1955

Pennsylvania Turnpike Commission

Harrisburg, Pennsylvania

NOTICE TO BIDDERS

Sealed proposals will be received by the Pennsylvania Turnpike Commission, through the Chairman, 11 North Fourth Street, Harrisburg, Pennsylvania, until 10:00 a.m., Eastern Daylight Saving Time, on 27 July 1955, and immediately thereafter will be taken to the Public Utility Commission's Hearing Room No. 1, North Office Building, State Capitol, Harrisburg, Pennsylvania, and publicly opened and read aloud for the following contract:

For the construction of superstructure of the Lackawanna River Bridge, Turnpike Section 37JK, part of the Northeastern Extension of the Pennsylvania Turnpike in Moosic and Taylor Boroughs over the Delaware and Hudson Railroad; the Delaware, Lackawanna and Western Railroad and Lackawanna River, Commonwealth of Pennsylvania. This section being situated as follows:

Beginning at a point approximately 4,630 feet north of the centerline of US 11, at Turnpike Station 132+79 in Moosic Borough, Lackawanna County; thence in a northerly direction 750 feet to Turnpike Station 140+29 at a point in Taylor Borough, Lackawanna County, approximately 5,380 feet north of the centerline of US 11, a distance of approximately 0.14 miles.

The approximate quantities of the principal items for the Lackawanna River Bridge Superstructure are as follows:

Class A Concrete in Bridge Slab	1,600	Cu. Yds.
Steel Reinforcing Bars	218,000	Lbs.
Structural Carbon Steel	1,626,000	Lbs.
Structural Manganese Steel	950,000	Lbs.
Metal Railing	1,600	Lin. Ft.
Pairs of Utility Ducts	1,575	Lin. Ft.

For the construction of the superstructure of the Clarks Summit Bridge, Turnpike Section 37M, part of the Northeastern Extension of the Pennsylvania Turnpike in South Abington Township, Lackawanna County, Commonwealth of Pennsylvania. This section being situated as follows:

Begining at a point approximately 724 feet southwest of the centerline of Legislative Route 9 at Turnpike Station 614+70.645 in South Abington Township, Lackawanna County; thence in a Northeasterly direction 1667.13 feet to Turnpike Station 631+37.771 at a point approximately 432 feet northeast of centerline of Legislative Route 9 in South Abington Township, Lackawanna County, a distance of approximately 0.3 miles.

The approximately quantities of the principal items for the Clarks Summit Bridge superstructure are as follows:

Class A Concrete	3,129	Cu. Yds.
Reinforcement Bars in Place	623,800	Lbs.
Fabricated Structural Carbon Steel	2,754,000	Lbs.
Fabricated Structural Manganese Steel	2,169,000	Lbs.
Metal Railing	3,330	Lin. Ft.
Pairs of Utility Ducts	3,296	Lin. Ft.

Copies of plans and specifications and other contract documents are on file and open to public inspection at the office of the Pennsylvania Turnpike Commission located at Harrisburg, Pennsylvania, on 7 July 1955. Plans, specifications and other contract documents will be available by this date for inspection or for mailing to prospective bidders. Copies of Specifications for grading, drainage, paving and structures may be purchased from the Pennsylvania Turnpike Commission for the sum of five (5) dollars per copy.

Plans and contract documents for this section, exclusive of specifications, may be purchased from the Pennsylvania Turnpike Commission for the sum of twenty (20) dollars for each set. No refund will be made for plans returned unless the project is withdrawn from letting by the Pennsylvania Turnpike Commission.

Remittances are payable by check or P. O. money order to the Pennsylvania Turnpike Commission and must accompany requests for drawings, specifications and contract documents.

The character and amount of bid security to be furnished by the bidder is stated in the Instructions to Bidders.

The Commission reserves the right to waive any informalities in or to reject any or all bids.

No bids may be withdrawn for thirty (30) days after the scheduled closing time for receipt of bids.

PENNSYLVANIA TURNPIKE COMMISSSION
James F. Torrance
Secretary and Treasurer

Harrisburg, Pennsylvania, 29 June, 1955

OFFICIAL PROPOSALS

Bids: July 21, 1955

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.,—Pursuant to the provisions of the Highway Law, Article 2, Title 9 of the Public Authorities Law, and special provisions for projects financed with Federal Aid Funds, sealed proposals will be received until ten-thirty o'clock A.M., advanced standard time, which is nine-thirty o'clock A.M., eastern standard time, on the 21st day of July 1955, by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects:

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
DISTRICT No. 1; N. F. RONAN, Acting District Engineer, 353 Broadway, Albany, N. Y.						
Warren and Essex	FARC 55-44	Loon Lake–Pottersville–Taylors, S. H. 692 Taylor-Schroon Lake Village, S. H. 745 Proj. F-383(10)	7.81	9" Cem. Conc. Pavt. 24' Wide = 7.78 Mi. Asp. Conc. Opt. = 0.03 Mi.	$100,000 Plans $25	$1,814,000
DISTRICT No. 2; LACY KETCHUM, District Engineer, 109 No. Genesee St., Utica, N. Y.						
Madison	FARC 55-48	Syracuse Turnpike, Pt. 1 S. H. 9023 Syracuse Turnpike, S. H. 337, Syracuse Turnpike, Pt. 3 S. H. 9022 Proj. F-470(18); S-769(2)	3.94	Asphalt Concrete, Optional	$45,000 Plans $15	839,000
Herkimer	M.T. 55-5	New York State Thruway Mohawk Section—Subdivision 11A and 12A At Sites of Indian Castle Gas Station-Restaurant, Types A and CM	—	Grading, Paving and Misc. Work	$27,000 Plans $10	491,000
DISTRICT No. 3, WM. ROBINSON, District Engineer, Weigh Lock Building, Syracuse, N. Y.						
Onondaga.....	FARC 55-45	Baldwinsville–Cold Spring, S. H. 671 Project S-405(1)	3.77	Asphalt Concrete, Optional	$22,000 Plans $10	405,000
Cayuga	FARC 55-50 R.C. 55-51	Auburn-Elbridge, S. H. 592 Project F-441(4)	5.53	Asphalt Concrete, Type 1A	$20,000 Plans $10	351,000
DISTRICT No. 4, E. G. H. YOUNGMANN, District Engineer, Barge Canal Terminal, Rochester 1, N. Y.						
Monroe	LOSP 55-1	Lake Ont. State Parkway Sect. D (Dewey Ave. Interchange)	0.21	Grading and Drainage Hy. Sep. Comp. I-Beam 75.2'	$19,000 Plans $10	332,000
Monroe	LOSP 55-2P	Lake Ont. State Parkway Sects. B-C-D (Paving) (Long Pond Road and Ramps)	5.62 (2.82) (Acc.)	Asp. Conc. Opt.=8.23 Mi. Misc. Work = 0.21 Mi. R. C. Rig. Frame Hy. Sep. 98'	$115,000 Plans $50	1,926,000
DISTRICT No. 5, C. R. WATERS, District Engineer, State Office Building, 65 Court St., Buffalo, N. Y.						
Chautauqua	FARC 55-43	Kennedy-Ellington, S. H. 9071 Project S-453(1)	4.13	Asp. Conc.; Optional	$27,000 Plans $15	468,000
Chautauqua	E. T. 55-2 S.T. 55-3	New York State Thruway-Erie Section-Sub. E-3A (Brockton to Pomfret Town Line); Lake Road; Berry Road; Van Buren Road; Chestnut Street; Lowell Road and Farel Road	5.28 (1.07) (Acc.)	9" Two Course Cem. Conc. Pavt. 2 @ 25' Wide = 5.26 Mi. Bit. Mac. Ty. 1 = 0.79 Mi. Surface Treated Gravel = 0.28 Mi. Misc. Work = 0.02 Mi. 4 Hy. Seps. Comp. I-Beams 306', 376.7', 296.5', 291' 3 Brs. Twin Boxes 36', 36' and 28' 1 Br. Comp. I-Beam 154'	$270,000 Plans $100	4,894,000
DISTRICT No. 7; R. W. SWEET, District Engineer, 444 Van Duzee St., Watertown, N. Y.						
Clinton, Franklin, Jefferson and Lewis	R.C. 55-46	Br. No. 1, S. H. 930; Br. No. 1 and No. 2, S. H. 5647; Br. No. 4, S. H. 1089 Br. No. 1, S. H. 5332A, Br. No. 4, S. H. 1908 and Br. No. 1, S. H. 8337 Br. No. 1, S. H. 1252	—	Cleaning and Painting 8 Bridges	$1,100 Plans $10	20,000
DISTRICT No 8, J. S. BIXBY, District Engineer, Pleasant Valley Road, Poughkeepsie, N. Y.						
Rockland	C.T. 55-8	New York State Thruway–Catskill Section-Subdivision 7 at Sites of Sloatsburg Gas Station-Restaurant (Types AA and CM)	—	Grading Paving and Misc. Work	$35,000 Plans $15	660,000
Orange	FASS 55-3	Thompson Ridge–Sullivan County Line, County Road No. 48 Project S-415(1)	2.89	Foundation Course Gravel (Double Surface Treatment) = 2.82 Miles, Grading = 0.07 Miles	$10,000 Plans $10	176,000
Dutchess	FARC 55-47	South, S. H. 223 Project U-394(12)	1.65	Asp. Conc., Optional	$30,000 Plans $10	538,000
Rockland	PIP 55-1 RC 55-52	Palisades, Int Parkway, Sect. 2 (Route 303 to Convent Road) New Jersey State Line–Congers Pt. 1, S. H. 1898	2.10 (0.53) (Acc.)	Grading and Structures = 1.76 Miles 9" Cem. Conc. Pavt = 0.34 Mi. Asp. Conc., Opt.= 0.53 Mi. 1 Br Sep. Comp. I-Beam 204.3' 3 Hy. Seps. Rig. Frames 136.5', 46.7' & 149'	$180,000 Plans $50	3,306,000
DISTRICT No. 9, F. W. DONOVAN, District Engineer, 71 Frederick St., Binghamton, N. Y.						
Otsego	R.C. 55-53	East Springfield-Cherry Valley, S. H. 934 Cherry Valley–Sharon Springs, Sharon Springs–Canajoharie, Pt. 1, S. H. 8064	6.39	Asp. Conc., Opt.	$14,000 Plans $10	255,000
Schoharie	FARC 55-49	Middleburg–Franklinton, Pt. 2, S. H. 8340 Livingstonville–Preston Hollow, Pts. 1 and 2, S. H. 8377 Project F-491(4)	6.46	Asp. Conc.; Opt.	$45,000 Plans $10	769,000
DISTRICT No. 10, M. E. GOUL, District Engineer, Montauk Highway, at Little East Neck Road, Babylon, L. I., N. Y.						
Nassau	PSC 7278-8966	Elimination of Grade Crossings of the Long Island Railroad with Various Streets in the Hamlet of Baldwin and Village of Freeport.	0.35 (1.56) (R.R.)	Railroad Relocation = 1.56 Miles Asp. Conc.; Opt. = 0.26 Mi. Cem. Conc. Pavt. = 0.09 Mi. 4 Plate Girders 86', 85.5', 69' and 76.5' 1 Viaduct and Station 920'	$158,000 Plans $100	2,868,000
Suffolk	SMSP 55-1	Sunken Meadow Spur Parkway (Contract No. 6)	7.02 (4.06) (Acc.)	8" Cem. Conc. Pavt. 2 @ 25' Wide = 4.81 Miles Asp. Conc., Opt.= 0.07 Mi. Misc. Work = 2.14 Mi. Acc. Rds. Cem. Conc. Pavt. = 3.81 Miles Acc. Rds. Asp. Conc., Opt. = 0.25 Miles	$140,000 Plans $50	2,514,000
Suffolk	B. P. 55-12	Beach Protection at Cedar Beach, North Shore, Town of Brookhaven	—	4 Concrete Block Groins and Timber Bulkhead	5% of Bid Plans $10	93,700

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts and Accounts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to priorities and allocations under the Defense Production Act of 1950, as amended, and all regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Laws, as set forth in "Instructions to Bidders."

When optional types are permitted on contracts with federal funds, bidders must state in the space provided in the proposal the exact designation of the optional type upon which the proposal is predicated.

The right is reserved to reject any or all bids.

JOHN W. JOHNSON
SUPT. OF PUBLIC WORKS

Bids: July 26, 1955

Power Authority of The State of New York

ADVERTISEMENT FOR PROPOSALS
FOR
CONSTRUCTION OF
MASSENA INTAKE
NEAR MASSENA, ST. LAWRENCE
COUNTY, NEW YORK
SPECIFICATION NO. PA-5-11004
ST. LAWRENCE CONTRACT NO. 16

NOTICE TO CONTRACTORS: The POWER AUTHORITY OF THE STATE OF NEW YORK will receive sealed proposals for the construction of Massena Intake and appurtenant works near the village of Massena, St. Lawrence County, New York, in the following ways:

(1) If brought in person on the day of receiving bids until 10:30 A. M. Eastern Daylight Saving Time on the 26th day of July, 1955 at 270 Broadway, Hearing Room C on the 6th Floor, New York, New York.

(2) If mailed in, until 10:15 A. M. Eastern Daylight Saving Time on the 26th day of July, 1955 at the Authority's office, 270 Broadway, Room 1300, New York 7, New York.

The proposals will be publicly opened and read aloud at the time and at the address given in (1) above.

The principal items of work are:

Estimated:

2,393,500 cu. yds.	Excavation, Common
13,200 cu. yds.	Excavation, Rock
5,000 lin. ft.	Drill Holes for Exploration and Grouting
821,500 cu. yds.	Embankments and Protection Stone
149,900 cu. yds.	Concrete
20,000 pounds	Miscellaneous Steel
1,350,000 pounds	Erection of Gates, Stop Logs, Hoists, Guides and Appurtenances

The work shall be completed on or before October 1, 1957.

Plans, specifications and Proposal Forms for the work will be on file in the Authority's office and in the offices of the Engineer, Uhl, Hall & Rich, 230 Congress Street, Boston 10, Massachusetts, and the Hydro-Electric Power Commission of Ontario, 620 University Avenue, Toronto 2, Ontario, may be inspected by prospective bidders during office hours and may be obtained from the Power Authority of the State of New York, 270 Broadway, Room 1300, New York 7, New York, upon application and prepayment of a fee of Twenty-five ($25.00) dollars per initial set and Ten ($10.00) dollars per set for additional sets no part of which will be refunded.

Bids must be made in duplicate in accordance with instructions contained in the Information for Bidders. Guarantee will be required with each bid in an amount not less than 10 percent of the gross sum bid except that guarantee in excess of $2,000,000 will not be required.

The right is reserved to reject any or all bids.

W. S. CHAPIN
6/30/55 GENERAL MANAGER

OFFICIAL PROPOSALS

Bids: July 21, 1955

State of New Jersey
State Highway Department
Trenton

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

ROUTE 3 (1927) ROUTE 20 (1953), SECS. 4D & 3B

Route 3 (1927) Routoe 20 (1953), Sections 4D and 3B, from Tenth Avenue to Fourth Avenue Widening and Dualization, and Crooks Avenue Intersection Revision, Cities of Clifton and Paterson, Passaic County. Federal Project No. U-139 (3). Length of project 1.093 miles. The principal items of work are:

Estimated:

25,285 cu. yds. Roadway Excavation—Unclassified
10,288 cu. yds. Subbase
12,200 sq. yds. Macadam Base Course, 8" thick
12,200 sq. yds. Pavement Type MA-BC-2, 3" thick
19,301 sq. yds. Conc. Pavement Surface, Rein. 9" thick
1,824 lin. ft. Rein. Conc. Culvert Pipe, various sizes
46—Inlets and Manholes
15,981 lin. ft. White Concrete Curbs, various sizes.

Bids for the above will be received at the office of the State Highway Department, in the CAFETERIA, State Highway Office Building, 1035 Parkway Avenue, Trenton, N. J., on Thursday, July 21, 1955, at NINE o'clock (9:00 A.M.—EASTERN STANDARD TIME), TEN o'clock (10:00 A.M.—DAYLIGHT SAVING TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plan and equipment with their bid.

NOTE: The proposed project is a "Federal Aid Project" authorized by the provisions of Title 27 of the Revised Statutes of New Jersey and supplements and by P.L. 413, 82nd Congress, and is to be performed in accordance with the "Required Provisions—Federal-Aid Contracts" of the Bureau of Public Roads, Department of Commerce, as outlined in the specifications. The attention of bidders is directed to the special provisions covering subletting or assigning the contract. The minimum wage paid to all common labor employed on this contract shall be $0.75 per hour. The minimum wage paid to all intermediate grade of labor employed on this contract shall be $1.00 per hour. The minimum wage paid to all skilled labor employed on this contract shall be $1.50 per hour.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, N. J., and may be inspected by prospective bidders during office hours. Plans and supplementary specifications will be furnished upon payment of a fee of FIFTEEN DOLLARS ($15.00) for each set upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Building, 1035 Parkway Avenue, Trenton, N. J., with a check drawn to the order of the State Highway Department. A charge of $5.00 will be made for supplementary specifications unaccompanied by construction plans. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by the following documents: (1) a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500. nor more than $20,000.; (2) a proposal bond for a sum of not less than fifty percent (50%) of the total price bid for the project; (3) a financial statement (Part 1 of the Prequalification Questionnaire); (4) a plan and equipment statement (Part 3 of the Prequalification Questionnaire); and (5) a Non-collusion Affidavit executed in duplicate; and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: STATE HIGHWAY DEPARTMENT
A. Lee Grover, Chief Clerk

Bids: July 26, 1955

State of New Jersey
State Highway Department
Trenton

NOTICE IS HEREBY GIVEN THAT sealed bids will be received by the State Highway Commissioner for:

ROUTE 29 (1927) RT. U.S. 22 (1953), SECS. 4J & 9H

Route 29 (1927) Route U.S. 22 (1953), Sections 4J and 9H, from Westfield Avenue to Washington Avenue, Partial Repaving, Union and Somerset Counties. Federal Project No. F-178(12). Length 8.706 miles. The principal items of work are:

Estimated:

40,958 cu yds. Roadway Excavation—Unclassified
30,211 sq. yds. Pavement Excavation
29,060 cu. yds. Subbase
57,000 sq. yds. Stone Base Course, 6" thick
57,000 sq. yds. Penetration Macadam Surface, 2" thick
30,000 sq. yds. Conc. Pavement Surface, Rein. 10" thick
1,595 lin. ft. Rein. Conc. Culvert Pipe, various sizes
10,515 lin. ft. White Concrete Curbs, various sizes

Bids for the above will be received at the office of the State Highway Department, in the CAFETERIA, State Highway Office Building, 1035 Parkway Avenue, Trenton, N. J., on Tuesday, July 26, 1955, at NINE o'clock (9:00 A.M.—EASTERN STANDARD TIME), TEN o'clock (10:00 A.M.—DAYLIGHT SAVING TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plan and equipment with their bid.

NOTE: The proposed project is a "Federal Aid Project" authorized by the provisions of Title 27 of the Revised Statutes of New Jersey and supplements and by P. L. 413, 82nd Congress, and is to be performed in accordance with the "Required Provisions= Federal-Aid Contracts" of the Bureau of Public Roads, Department of Commerce, as outlined in the specifications. The attention of bidders is directed to the special provisions covering subletting or assigning the contract. The minimum wage paid to all common labor employed on this contract shall be $0.75 per hour. The minimum wage paid to all intermediate grade of labor employed on this contract shall be $1.00 per hour. The minimum wage paid to all skilled labor employed on this contract shall be $1.50 per hour.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, N. J., and may be inspected by prospective bidders during office hours. Plans and supplementary specifications will be furnished upon payment of a fee of FIFTEEN DOLLARS ($15.00) for each set upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Building, 1035 Parkway Avenue, Trenton, N. J., with a check drawn to the order of the State Highway Department. A charge of $5.00 will be made for supplementary specifications unaccompanied by construction plans. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by the following documents: (1) a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500. nor more than $20,000.; (2) a proposal bond for a sum of not less than fifty percent (50%) of the total price bid for the project; (3) a financial statement (Part 1 of the Prequalification Questionnaire); (4) a plan and equipment statement (Part 3 of the Prequalification Questionnaire); and (5) a Non-collusion Affidavit executed in duplicate; and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: STATE HIGHWAY DEPARTMENT
A. Lee Grover, Chief Clerk

Bids: July 19, 1955

State of New Jersey
State Highway Department
Trenton

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

ROUTE S-4A (1927) ROUTE 87 (1953), SEC. 2

Route S-4A (1927) Route 87 (1953), Section 2, Intersection Revision at Huron Avenue and Approach to Atlantic City Marina, Atlantic City, Atlantic County. Length 0.508 mile. The principal items of work are:

Estimated:

3,340 cu. yds. Roadway Excavation—Earth
7,148 cu. yds. Borrow Excavation
11,802 sq. yds. 4" Topsoiling
22,051 sq. yds. Macadam Base Course, 7" thick
2,426 tons Pavement Type FA-BC-1
3,942 lin. ft. Underdrain Type F
1,812 lin. ft. Corrug. Metal Pipe, Various sizes
16 Inlets
3,516 lin. ft. White Concrete Curbs

Bids for the above will be received at the office of the State Highway Department, in the CAFETERIA, State Highway Office Building, 1035 Parkway Ave., Trenton, N. J., on Tuesday, July 19, 1955, at NINE o'clock (9:00 A.M.—EASTERN STANDARD TIME), 10:00 o'clock (10:00 A.M.—DAYLIGHT SAVING TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plan and equipment with their bid.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, N. J., and may be inspected by prospective bidders during office hours. Plans and supplementary specifications will be furnished upon payment of a fee of FIFTEEN DOLLARS ($15.00) for each set upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Building, 1035 Parkway Avenue, Trenton, N. J., with a check drawn to the order of the State Highway Department. A charge of $5.00 will be made for supplementary specifications unaccompanied by construction plans. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by the following documents: (1) a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00; (2) a proposal bond for a sum of not less than fifty percent (50%) of the total price bid for the project; (3) a financial statement (Part 1 of the Prequalification Questionnaire); (4) a plan and equipment statement (Part 3 of the Prequalification Questionnaire); and (5) a Non-collusion Affidavit executed in duplicate; and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: STATE HIGHWAY DEPARTMENT
A. Lee Grover, Chief Clerk

OFFICIAL PROPOSALS

Bids: August 2, 1955

Contract LGA-250.001

ADVERTISEMENT
THE PORT OF NEW YORK AUTHORITY
LA GUARDIA AIRPORT
SAND STORAGE BUNKER

Sealed proposals for the construction of a sand storage bunker at La Guardia Airport will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Tuesday, August 2, 1955, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Engineer of Materials of the Authority, Room 1112. Documents will be furnished upon deposit of $30.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $30.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt in duplicate will be issued. A copy of the receipt shall be delivered to Room 1112, where the documents will be furnished.

Those who have submitted a bid on the contract will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

New York, July 14, 1955

Bids: August 18, 1955

Water System Improvements

ADVERTISEMENT FOR BIDS

Sealed proposals for furnishing all labor and materials for the construction of:

WATERWORKS IMPROVEMENTS in Marcus Hook and S.E. Chester, consisting of Reinforcing Mains; and for a PRESSURE IMPROVEMENT PROGRAM in Nether Providence, consisting of an Elevated Water Storage Tank, Booster Pumping Station, and Reinforcing Mains; and for

FILTER PLANT EXTENSIONS at Pine Grove, on the Octoraro Creek, Chester County, Pa.

will be received by the Executive Manager of the Chester Municipal Authority at the Authority Office, 5th and Welsh Streets, Chester, Pennsylvania, until 2:00 P.M., E.D.S.T., Thursday, August 18, 1955, at which time the proposals will be publicly opened and read aloud.

The work will be divided into the following contracts:

CONTRACT NO. 1—WATER WORKS IMPROVEMENTS, MARCUS HOOK REINFORCING MAINS

(Approximately 13,200 lineal feet of 20 inch cement-lined mechanical joint cast iron pipe, fittings, and appurtenances, or alternate installation of 20" prestressed concrete cylinder pipe, in Blueball Ave. from 10th St. to Meeting House Road, and in Meeting House Rd. from Blueball Ave. to Market St.)

CONTRACT NO. 2—WATER WORKS IMPROVEMENTS, S.E. CHESTER REINFORCING MAINS

(Approximately 5,600 lineal feet of 18" cement-lined mechanical joint cast-iron pipe, fittings and appurtenances, and approximately 3,600 lineal feet of Owner-furnished 12 inch bell-and-spigot cast iron pipe, in Third St. from Market St. to Hinkson St., thence in Hinkson St. to McDowell St., thence to Elsinore Place, and in 8th St. from Hinkson St. to Morton St., in 12th St. from Chestnut St. to Edgemont Ave., in 14th St. West of Melrose Ave., and in 14th St. from Upland St. to Edgemont Ave.).

CONTRACT NO. 3—NEITHER PROVIDENCE PRESSURE IMPROVEMENT PROGRAM

(New 100,000 gal. Elevated Steel Water Storage Tank or alternate reinstallation of existing elevated tank, Booster Pumping Station, and approximately 2,600 lineal feet of Owner-furnished 12" bell and spigot cast iron pipe in Harvey Rd. from Chester Rd. to Willow Rd., thence in Willow Rd. to Blakeley Rd., in Media Parkway from Willow Rd. to Moore Rd., thence in Moore Rd. to elevated tank at Hastings Ave.)

CONTRACT NO. 4—STRUCTURAL WORK FOR FILTER PLANT EXTENSIONS

CONTRACT NO. 5—MECHANICAL WORK FOR FILTER PLANT EXTENSIONS

CONTRACT NO. 6—ELECTRICAL WORK FOR FILTER PLANT EXTENSIONS

CONTRACT NO. 7—HEATING AND VENTILATING WORK FOR FILTER PLANT EXTENSIONS

Contractors may submit separate proposals on Contracts Nos. 1, 2, 3, 4, 5, 6 and 7, may bid contracts Nos. 1, 2, and 3 in combination; and may bid Contracts Nos. 4 and 5 in combination.

Information for Bidders, Forms of Proposal, Specifications, Form of Contract and Plans may be examined at the office of the Chester Municipal Authority, or at the Office of Albright & Friel Inc., Consulting Engineers, 121 S. Broad St., Philadelphia 7, Pennsylvania

Plans for Contracts Nos. 1, 2 and 3 are contained in one set, and Plans for Contracts Nos. 4, 5, 6 and 7 are contained in one set. Copies of either set may be obtained at the office of Albright & Friel Inc. upon a deposit of $50.00 for each set of documents. If the documents are returned in good condition within FIVE days after the opening of bids, the full amount of deposit will be returned to each actual bidder for one set of documents, and other deposits will be refunded with a deduction of $25.00 to defray the cost of reproduction. If the documents are not returned within the time stated, the entire amount of deposit will be forfeited.

A certified check or bid bond, drawn to the order of the Chester Municipal Authority, equal to five percent (5%) of the amount of bid must be submitted with the proposal.

All proposals are to be addressed to the Chester Municipal Authority, 5th and Welsh Sts., Chester, Pennsylvania, to Attention of Mr. Clarence L. Conner, Executive Manager, and shall be submitted in a sealed envelope, plainly marked with Contract No. or Nos. for which proposals are submitted, and with name of bidder indicated.

The Chester Municipal Authority reserves the right to reject any or all bids, to waive any informality in bids and to award each contract separately or in combinations indicated, as may be deemed by the Authority to be in the Authority's best interest.

No bidder may withdraw his bid within sixty (60) days after the actual date of the opening thereof.

CLARENCE L. CONNER
EXECUTIVE MANAGER

July 14, 1955

Bids: July 28, 1955

State of New Jersey
State Highway Department
Trenton

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

ROUTE 4, SECTIONS 5C and 4F

Route 4, Sections 5C and 4F, from West Saddle River Road to Route 17, Widening and Dualization, Boroughs of Fair Lawn and Paramus, Bergen County. Federal Project No. U-197(1). Length 1.236 miles. The principal items of work are:

Estimated:

Roadway Items

23,500 cu. yds. Roadway Excavation—Unclassified
1,000 cu. yds. Wet Excavation
6,040 sq. yds. Pavement Excavation
47,500 cu. yds. Borrow Excavation
14,315 cu. yds. Subbase
15,580 sq. yds. Macadam Base Course, 8" thick
28,713 sq. yds. Pavement Type MA-BC-1 & MA-BC 2
19,718 sq. yds. Conc. Pavement Surface, Rein. 9" thick
4,867 lin. ft. Rein. Conc. Culvert Pipe, various sizes
432 lin. ft. Cast Iron Culvert Pipe, various sizes
70—Inlets and Manholes
33,705 lin. ft. White Concrete Curbs, various sizes

Planting Items

51—Trees, Deciduous
638—Trees, Small and Flowering

Bridge Items

3,987 cu. yds. Concrete in Structures
300,395 lbs. Reinforcement Steel in Structures
354,250 lbs. Structural Steel
3,080 lin. ft. Timber Piles

Bids for the above will be received at the office of the State Highway Department, in the CAFETERIA, State Highway Office Building, 1035 Parkway Avenue, Trenton, N. J., on Thursday, July 28, 1955, at NINE o'clock (9:00 A.M.—EASTERN STANDARD TIME), TEN o'clock (10 A.M.—DAYLIGHT SAVING TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plan and equipment with their bid.

NOTE: The proposed project is a "Federal Aid Project" authorized by the provisions of Title 27 of the Revised Statutes of New Jersey and supplements and by P.L. 413, 82nd Congress, and is to be performed in accordance with the "Required Provisions= Federal-Aid Contracts" of the Bureau of Public Roads, Department of Commerce, as outlined in the specifications. The attention of bidders is directed to the special provisions covering subletting or assigning the contract. The minimum wage paid to all common labor employed on this contract shall be $0.75 per hour. The minimum wage paid to all intermediate grade of labor employed on this contract shall be $1.00 per hour. The minimum wage paid to all skilled labor employed on this contract shall be $1.50 per hour.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, N. J., and may be inspected by prospective bidders during office hours. Plans and supplementary specifications will be furnished upon payment of a fee of TWENTY-FIVE DOLLARS ($25.00) for each set upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Bldg., 1035 Parkway Ave., Trenton, N. J., with a check drawn to the order of the State Highway Department. A charge of $5.00 will be made for supplementary specifications unaccompanied by construction plans. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by the following documents: (1) a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said check shall not be less than $500. nor more than $20,000.; (2) a proposal bond for a sum of not less than fifty percent (50%) of the total price bid for the project; (3) a financial statement (Part 1 of the Prequalification Questionnaire); (4) a plan and equipment statement (Part 3 of the Prequalification Questionnaire); and (5) a Non-collusion Affidavit executed in duplicate; and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed:
STATE HIGHWAY DEPARTMENT
A. Lee Grover, Chief Clerk

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Invitation No. DS-4465) will be received at Denver, Colorado, until August 23, 1955, for furnishing one 230-kv (900-kv BIL), 1,200-ampere, 5,000,000-kva; three 115-kv (550-kv BIL), 1,200-ampere, 3,500,000-kva; and one 14.4-kv (110-kv BIL), 1,200-ampere, 1,000,000-kva, power circuit breakers for Granite Falls Substation, Transmission Division, South Dakota, Missouri River Basin Project. Delivery is desired within 300 days. For particulars, address Bureau of Reclamation, Building 53, Denver Federal Center, Denver, Colorado.

OFFICIAL PROPOSAL

RATE: $1.80 per line (or fraction) per insertion.

CLOSING DATE: 10:30 a.m. Friday for issue out following Thursday.

SEND COPY: Official Proposal Division, Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.

OFFICIAL PROPOSALS

Bids: July 26, 1955

State of New Jersey
State Highway Department
Trenton

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

RT. 42, NORTH-SOUTH FREEWAY, SECTIONS 13B AND 14A

Route 42, Sections 13B and 14A, North-South Freeway, from Browning Road to Lower Landing Road, Grading, Bridges and Incidental Paving, in the Boroughs of Bellmawr and Runnemede, Deptford and Gloucester Townships, Camden and Gloucester Counties. Federal Project No. F-193(4). Length 3.655 miles. The principal items of work are:

Estimated:

Roadway Items Common to both Alternatives A and B

933,972 cu. yds. Roadway Excavation—Earth
119,711 cu. yds. Wet Excavation
37,170 cu. yds. Borrow Excavation—Bridge Foundation
11,825 cu. yds. Porous Fill
5,000 cu. yds. Channel and Ditch Excavation
135,500 sq. yds. 4" Topsoiling
19,500 sq. yds. Macadam Base Course, 8" thick
15,000 sq. yds. Gravel Surface Course, 8" thick
1,000 tons Pavement Type MA-BC-1
19,500 sq. yds. Pavement Type MA-BC-2
381 sq. yds. Conc. Pavement Surface, Rein. 8" & 13" Average thickness
7,740 lin. ft. Rein. Conc. Culvert Pipe, various sizes
1,502 lin. ft. Corrug. Metal Pipe, Various sizes
74 Inlets and Manholes
10,712 lin. ft. White Concrete Curbs, various sizes

Roadway Items—Alternative A (Wet Excavation & Backfill Method)

115,937 cu. yds. Roadway Excavation—Earth
904,195 cu. yds. Wet Excavation
64,293 cu. yds. Borrow Excavation—Bridge Foundation
676,898 cu. yds. Borrow Excavation—Zone 2
73,667 cu. yds. Borrow Excavation—Zone 3
31,831 cu. yds. Channel Excavation
55,000 sq. yds. 4" Topsoiling
268 lin. ft. 84" Corrug. Metal Culvert Pipe

Roadway Items—Alternative B (Sand Drain Method)

115,977 cu. yds. Roadway Excavation—Earth
70,973 cu. yds. Wet Excavation
63,404 cu. yds. Borrow Excavation—Bridge Foundation
152,595 cu. yds. Borrow Excavation—Zone 1
6,753 cu. yds. Borrow Excavation—Zone 3
521,000 lin. ft. Vertical Sand Drains
32,245 cu. yds. Channel Excavation
92,500 sq. yds. 4" Topsoiling
268 lin. ft. 84" Corrug. Metal Culvert Pipe

Bridge Items

8,160 cu. yds. Foundation Excavation
22,671 cu. yds. Concrete in Structures
1,650,085 lbs. Reinforcement Steel in Structures
5,222,840 lbs. Structural Steel
38,510 lin. ft. Untreated Timber Piles
27,950 lin. ft. Treated Timber Piles
23,800 lin. ft. Cast in Place Concrete Piles
10.8 M.B.M. Treated Timber

(NOTE: Bidders may submit bids on either Alternative A (Wet Excavation and Backfill Method) or Alternative B (Sand Drain Method)

Bids for the above will be received at the office of the State Highway Department, in the CAFETERIA, State Highway Office Building, 1035 Parkway Avenue, Trenton, N. J., on Tuesday, July 26, 1955, at NINE o'clock (9:00 A.M.—EASTERN STANDARD TIME), TEN o'clock (10:00 A.M.—DAYLIGHT SAVING TIME), and wil. be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the Prequalification Law (R.S.52:35) and the regulations adopted by the State Highway Commissioner. In this connection the attention of bidders is directed to the following excerpt from the revised regulations, which became effective March 27, 1954:

"Class 'Z' (Unlimited) involves work in excess of $6,000,000.00. A prospective bidder, so prequalified, will be notified of the intention of the New Jersey State Highway Department to undertake a project in the 'Unlimited' class, and such prospective bidders shall be required to specifically prequalify to bid upon the work in question by applying for such specific classification at least twenty (20) days before the date set for the receiving of bids."

Prospective bidders are notified that this project is in the "Class 'Z' (Unlimited) Class.

Bidders must also submit a revised financial statement and statement of plan and equipment with their bid.

NOTE: The proposed project is a "Federal Aid Project" authorized by the provisions of Title 27 of the Revised Statutes of New Jersey and supplements and by P. L. 413, 82nd Congress, and is to be performed in accordance with the "Required Provisions-Federal-Aid Contracts" of the Bureau of Public Roads, Department of Commerce, as outlined in the specifications. The attention of bidders is directed to the special provisions covering subletting or assigning the contract. The minimum wage paid to all common labor employed on this contract shall be $0.75 per hour. The minimum wage paid to all intermediate grade of labor employed on this contract shall be $1.00 per hour. The minimum wage paid to all skilled labor employed on this contract shall be $1.50 per hour.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, N. J., and may be inspected by prospective bidders during office hours. Plans and supplementary specifications will be furnished upon payment of a fee of FIFTY DOLLARS ($50.00) for each set upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Building, 1035 Parkway Avenue, Trenton, N. J., with a check drawn to the order of the State Highway Department. A charge of $5.00 will be made for supplementary specifications unaccompanied by construction plans. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by the following documents: (1) a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00; (2) a proposal bond for a sum of not less than fifty percent (50%) of the total price bid for the project: (3) a financial statement (Part 1 of the Prequalification Questionnaire); (4) a plan and equipment statement (Part 3 of the Prequalification Questionnaire); and (5) a Non-collusion Affidavit executed in duplicate; and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: STATE HIGHWAY DEPARTMENT
A. Lee Grover, Chief Clerk

Bids: July 28, 1955

State of New Jersey
State Highway Department
Trenton

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

ROUTE 17, SECTION 9B

Route 17, Section 9B, from Ramapo River to Franklin Turnpike, Dualization, Mahwah Township and Borough of Ramsey, Bergen County. Federal Project No. U-102(7). Length 2.708 miles. The principal items of work are:

Estimated: Roadway Items

129,000 cu. yds. Roadway Excavation—Unclassified
27,000 cu. yds. Wet Excavation
5,000 cu. yds. Roadway Excavation—Unsuitable Material
3,924 sq. yds. Pavement Excavation
274,000 cu. yds. Borrow Excavation
12,420 cu. yds. Porous Fill
10,600 cu. yds. Channel Excavation
47,974 cu. yds. Subbase
13,142 sq. yds. Pen. Gravel Shoulders, 2" thick
109,000 sq. yds. 4" Topsoiling
38,500 sq. yds. Slope Stabilization
73,407 sq. yds. Macadam Base Course, 8" thick
65,645 sq. yds. Pavement Type MA-BC-1 and MA-BC-2
66,597 sq. yds. Conc. Pavement Surface, Rein. 9" thick
13,923 lin. ft. Rein. Conc. Culvert Pipe, various sizes
555 lin. ft. Cast Iron Culvert Pipe, various sizes
2,518 lin. ft. Corrug. Metal Culvert Pipe, various sizes
169—Inlets and Manholes
41,314 lin. ft. White Conc. Curbs, various sizes
14,280 lin. ft. Wire Rope Fence
27—Demolition of Buildings

Bridge Items

7,257 cu. yds. Concrete in Structures
375,795 lbs. Reinforcement Steel in Structures
773,500 lbs. Structural Steel
15,790 lin. ft. Timber Piles

Bids for the above will be received at the office of the State Highway Department, in the CAFETERIA, State Highway Office Building, 1035 Parkway Avenue, Trenton, N. J., on Thursday, July 28, 1955, at NINE o'clock (9:00 A.M.—EASTERN STANDARD TIME), TEN o'clock (10:00 A.M.—DAYLIGHT SAVING TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plan and equipment with their bid.

NOTE: The proposed project is a "Federal Aid Project" authorized by the provisions of Title 27 of the Revised Statutes of New Jersey and supplements and by P. L. 350, 83rd Congress, and is to be performed in accordance with the "Required Provisions= Federal-Aid Contracts" of the Bureau of Public Roads, Department of Commerce, as outlined in the specifications. The attention of bidders is directed to the special provisions covering subletting or assigning the contract. The minimum wage paid to all common labor employed on this contract shall be $0.75 per hour. The minimum wage paid to all intermediate grade of labor employed on this contract shall be $1.00 per hour. The minimum wage paid to all skilled labor employed on this contract shall be $1.50 per hour.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, N. J., and may be inspected by prospective bidders during office hours. Plans and supplementary specifications will be furnished upon payment of a fee of THIRTY-FIVE DOLLARS ($35.00) for each set upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Building, 1035 Parkway Avenue, Trenton, N. J., with a check drawn to the order of the State Highway Department. A charge of $5.00 will be made for supplementary specifications unaccompanied by construction plans. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by the following documents: (1) a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00.; (2) a proposal bond for a sum of not less than fifty percent (50%) of the total price bid for the project; (3) a financial statement (Part I of the Prequalification Questionnaire); (4) a plan and equipment statement (Part 3 of the Prequalification Questionnaire); and (5) a Non-collusion Affidavit executed in duplicate; and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed:
STATE HIGHWAY DEPARTMENT
A. Lee Grover, Chief Clerk

EMPLOYMENT OPPORTUNITIES

The Advertisements in this section include all employment opportunities—executive, management, technical, selling, office, skilled, manual, etc.

Positions Vacant
Positions Wanted
Part Time Work

Civil Service Opportunities....
Selling Opportunities Wanted
Selling Opportunities Offered

Employment Agencies
Employment Services
Labor Bureaus

DISPLAYED

The advertising rate is $24.25 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

An advertising inch is measured ⅞" vertically on a column—3 columns—30 inches to a page.

Subject to Agency Commission.

——RATES——

UNDISPLAYED

$1.80 per line, minimum 3 lines. To figure advance payment count 5 average words as a line.

Box Numbers—counts as 1 line.

Discount of 10% if full payment is made in advance for 4 consecutive insertions.

Not subject to Agency Commission.

Send NEW ADS to ENGINEERING NEWS RECORD, 330 W. 42nd St., N. Y. 36, N. Y. for July 28th issue closing July 18th

DESIGN ENGINEERS

Permanent opportunities for qualified engineers experienced in design of:

STRUCTURAL STEEL
REINFORCED CONCRETE
HEAVY MACHINES

Applicable to design of Blast Furnaces, Ore Beneficiation Plants and similar heavy structures

also

PIPING
DESIGN AND LAYOUT

Applicable to Oil Refinery and Petro-Chemical Plant design

TOP EARNINGS—PENSION PLAN

MANY OTHER BENEFITS

Please contact or write:

Edward A. Kolner
ARTHUR G. McKEE & CO.
2300 Chester Ave. Cleveland 1, Ohio

STRUCTURAL ENGINEERS
BRIDGE DESIGNERS

Excellent opportunity for Structural Engineers experienced in design of structural steel or reinforced concrete. Recent graduates and detail draftsmen also accepted. Good living conditions with insurance, pension and bonus plans.

Send complete outline of experince, date available and salary desired in first letter to:

GANNETT FLEMING CORDDRY & CARPENTER, INC.
Box 366, Harrisburg, Pa.

ESTIMATOR WANTED

By Southern construction firm doing approximately $20,000,000.00 worth of work annually. Must be college graduate and have wide experience in all types of building construction. Must be capable of supervising Estimating Department and know pricing of labor and materials and be able to prepare and submit bid on any size project. Salary commensurate with ability. Must be willing to locate in South.

P6971 Engineering News Record
330 W. 42 St., New York 36, N. Y.

Sales Engineers

A major steel company has need for sales engineers in its rapidly expanding prefabricated steel building division. Excellent opportunities for men 25 to 30 years old with engineering background and a desire for sales work. Attractive starting salary with company car, expenses and bonus plan. Openings in Baltimore, Philadelphia and Pittsburgh.

P-6903, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

ESTIMATOR SENIOR

Reinforcing Steel.

HERRICK IRON WORKS,
1734 Campbell Street, Oakland, California.
Phone Glencourt 1-1767. Mr. Flood.

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

Estimator, for firm doing extensive sewer, watermain, treatment plant, heavy construction. Must be graduate engineer or have extensive engineering background, with ability to obtain price and job information. Permanent position for qualified applicant. P-6074, Engineering News-Record.

Construction Foreman for firm engaged in extensive sewer, water main and treatment plant facilities. Permanent position in N. Y. State area. Only qualified applicants with broad experience. P-6595, Engineering News-Record.

Wanted: Instructor in engineering drawing and descriptive geometry. Salary $3600 for 9 month period. Dept. of Engr. Drawing, University of North Dakota, Grand Forks, North Dakota.

Civil Engineer for local road survey, design and construction. Prefer man with Illinois V. S. S. or Twp. M.F.T. experience. State education, experience, reference and salary expected. Hancock County Highway Dept. Carthage, Illinois.

Highway Inspectors—Thoroughly experienced. For bridge and structures. Grade & drain. Concrete pavement. Bituminous concrete pavement. Also highway designers & draftsmen for structures and roadway. Work on highway projects in Central part of United States. Reply should include details of education, experience and salary requirement. Each response to this will receive prompt attention and reply. P-6882, Engineering News-Record.

Exp. steel detailer for consultant's office in Ohio. Submit experience resume to P-6897, Engineering News Record.

(Continued on following page)

HIGHWAY DESIGN ENGINEERS

Minimum of 3 years' experience in design of highways and expressways and associated engineering for work in our air-conditioned St. Louis office.

Employee Benefit Plan, paid vacations, and holidays, sick leave, Blue Cross.

Please write to or inquire at

SVERDRUP & PARCEL ENGINEERING COMPANY

1134 Locust St. St. Louis 1, Mo.
1625 Eye St., N.W. Washington 25, D. C.

DEPUTY BUILDING INSPECTION SUPERVISOR: Graduation from an accredited four years college with degree in structural or architectural engineering. Seven years of experience in the structural design of buildings and some experience in examination of plans and specifications of building projects and applications for building permits. Salary $5772-$6812 per year.

ARCHITECT I: Graduation from a college or university of recognized standing with a degree in architecture and 2 years experience in architectural planning, design or drafting. Salary $4628-$5460 per year.

Complete details by writing to:

DIRECTOR OF PERSONNEL
Municipal Building, Hartford, Conn.

ARCHITECTS AND ENGINEERS

Permanent openings available for qualified personnel experienced in—

a. **Structural Steel Design**
b. **Civil Engineering**
c. **Architecturad Draftsman and Designers**

P-7031, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

When Answering
BOX NUMBERS . . .

to expedite the handling of your correspondence and avoid confusion, please do not address a single reply to more than one individual box number. Be sure to address separate replies for each advertisement.

POSITIONS VACANT

(Continued from preceding page)

Superintendent-Foreman — aggressive and thoroughly experienced in commercial and institutional building construction. Capable of organizing and directing complete projects. Excellent opportunity with a long established firm. Location Birmingham and North Alabama. P-6809, Engineering News-Record.

Position available instructor or assistant professor in civil engineering in New England college. Appointee to teach mechanics, mechanics of materials, soil mechanics and surveying. P-6858, Engineering News-Record.

Draftsman—Experienced structural steel detailer and checker for building construction. Permanent. All employee benefits, paid vacation, insurance, etc. Submit resume and salary desired. Barber & Ross Company, 5th & V Sts., N. E. Washington, D. C.

Architect—Qualified through training and experience to design churches, schools and other buildings. Give full information as to education, experience, salary requirements and when available. Location Eastern New York. P-6735, Engineering News-Record.

Engineers—Experienced in design and pre-preparation of plans for water works and sewerage systems and structural design. Advise education, experience, salary requirements and when available. Location Eastern New York. Reply P-6736, Engineering News-Record.

Engineer—Experienced in bridge and general marine construction. Salary open. Address reply to P. O. Box 647, Savannah, Georgia.

Project Superintendent — Experienced in bridge and general marine construction. Salary open. Address reply to P. O. Box 647, Savannah, Georgia.

Help Wanted—Male structural steel detailers experienced, first class, permanent position—excellent opportunity—Box 955, New Haven, Conn.

Help Wanted—Male experienced graduate engineer for structural steel take-off and estimating—Box 955, New Haven, Conn. Will also consider application of recent graduate.

Construction Superintendent with engineering background, should have sewage disposal, sewer system, and water works experience. Work located in Ohio and Western Pennsylvania. Salary open. P-7023, Engineering News-Record.

Mechanical Engineer—Construction equipment manufacturer in Southwest requires man for product development and design work. Write stating full qualifications and salary requirement. All replies confidential. P-7024, Engineering News-Record.

Draftsmen—Structural exp. detailers and checkers wanted, especially of squad leader caliber. Erdner Engr. Co., 29 E. Madison St. Chicago, Ill. Tel FRanklin 2-5283.

Construction Foreman: Immediate employment. Must be thoroughly experienced building sewers including wellpoint systems. Broad sewerage knowledge required. Principal work in Borough of Brooklyn and Queens, N.Y.C. Reply full if qualified stating jobs employed on within five years and salaries received. P-7022, Engineering News-Record.

Civil Engineer for municipal street, sewer, and drainage work including survey, design and supervision. Forward resume, salary expected and earliest date available. P-7025, Engineering News-Record.

Permanent position for technically qualified civil or sanitary engineering graduate to assist divisional sales manager in market and application development for control instrumentation for water and sewage treatment installations. Experience with consulting engineers or sanitary utilities desirable. Reply by letter only to Mr. R. H. Babcock, The Foxboro Company, Foxboro, Mass.

Construction Superintendent—experienced in industrial, institutional. Real future for the right man. Write stating qualifications, previous employment, references, availability. Permanent position for qualified man. Salary commensurate with experience and ability. P-6988, Engineering News-Record.

Estimator For general contractor must have civil engineering background and at least five years' experience in the preparation of estimates for all phases of general construction. To apply furnish complete written resume of education and experience. P-7037, Engineering News-Record.

Structural designer for industrial building contractor's engineering department, N.Y.C. Licensed graduate. Personable. Past field experience in building construction required. $8,000. PW-7035, Engineering News-Record.

SEWERAGE WORKS ENGINEER
Greenwich, Conn.
Salary range $5472-$6600
open competitive examination
applications accepted until Aug. 1
Personnel Office—Town Hall—Greenwich, Conn.

CHALLENGING POSITION
Man with good engineering background to run a concrete products and ready-mix plant, must be able to show results. A challenging position with commensurate salary.
P-6934, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

WANTED: ASS'T TRAFFIC ENGR.
For traffic engineering department just recently established. Salary range $537 to $620 a month with maximum salary obtainable through annual and longevity increases. Registration as a professional engineer required. Applications accepted until the needs of the service are filled.
Write Personnel Department
City Hall, Madison 3, Wis.

POSITION VACANT

Wanted: Civil engineering draughtsman, to take charge of small office in New Jersey Seashore resort. Top salary to qualified man. P-6995, Engineering News-Record.

POSITIONS WANTED

Shovel and dragline operator 20 yrs. experience operating all makes on all types of construction. 8 yrs. on 80D Northwest. Highly mechanical inclined. Desire job as supervisor or full time operating. Will go any place. PW-6908, Engineering News-Record.

Heavy Construction Manager. Thoroughly qualified in field, and office 26 years experience hydro, and steam plants, dams, tunnels and airbases. Construction wide, and cost-conscious now employed. Have had foreign experience. PW-6920, Engineering News-Record.

Top flight tunnel supt 26 yrs experience in all types of ground. 11 yrs with present employer have supervised some of world's largest and most difficult underground projects, recently completed 18 mile tunnel in foreign country. At present finishing a 5 mile water tunnel, capable start to finish, have 1st class following. Understand men, machinery and cost. Resume sent on request. I can get progress, salary straight or percentage. PW-6860, Engineering News-Record.

ENGINEERS
Foreign Service

Graduate Chemical, Mechanical, and Electrical Engineers with minimum of 5 years' experience. For specialized assignments commensurate with qualifications in various phases of project and process engineering. Write giving full particulars regarding personal history and work experience. Please include telephone number.

Recruiting Supervisor, Box 30
ARABIAN AMERICAN OIL COMPANY
505 PARK AVENUE, NEW YORK 22, N. Y.

POSITIONS WANTED

Retired engineer, technologist, seeks lines, as manufacturers agent, builders, architects. PW-6847, Engineering News-Record.

Engineer—Registered BSCE 9 years experience construction, heavy equipment, contracts, industrial plant design, technical training programs, costs. Desires position with a future. Available August. PW-6990, Engineering News-Record.

Civil Engineer—30—5 years varied structural, airfield and highway experience. Just completed 3 years overseas. MIT graduate. Locate anywhere. Married, so earnings plus opportunity to perform and advance are paramount. PW-6993, Engineering News-Record.

Structural Designer, MCE, 34, thoroughly familiar with European civ. eng. practice. European trained and multilingual. Experience in foundations, highway structures, bridges, industrial buildings, airports field supervision. Position with US firm desired in Europe. PW-7026, Engineering News-Record.

Estimator—project manager—bridges, highways, sewers, water lines, piers, piles, railroads. Estimating includes take-offs, pricing and sub-pricing of complete bid. Supervised $1-$5,000,000 projects. Proven managerial ability. P.E. 34 N.Y., L.I., Westchester. PW-7036, Engineering News-Record.

Design Engineer: Hydraulic and concrete. Reg. P.E. with twenty years' experience on large irrigation projects plus some experience in structural steel design. Presently employed. Desires domestic or foreign assignment. Will accept foreign assignment on single status. Some knowledge of Spanish. PW-7038, Engineering News-Record.

SEARCHLIGHT SECTION

BUSINESS OPPORTUNITIES — EQUIPMENT, USED OR SURPLUS NEW.

(Continued on pages 114-118)

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

BUSINESS OPPORTUNITY

Wanted to buy surveying and mapping business. BO-6792, Engineering News-Record, 520 N. Michigan Avenue, Chicago 11, Illinois.

LEARN ESTIMATING
Complete Building Estimators Course, also Building Labor Calculator for practicing estimators. Thirty-fourth year serving the building industry. For free trial and all particulars write:
TAMBLYN SYSTEM
1428 Gilpin St. Denver 6, Colorado

Errors, Omissions, & Neglect Insurance
For Engineers & Architects
Underwriters at Lloyd's, London
Write for Information
W. J. Robbins & Company
885 North La Salle St., Chicago 10, Illinois

Engineers—Foremen—Office Men
Learn latest methods to organize and run work. Prepare for the top jobs.
Send post card for details.
GEO. E. DEATHERAGE & SON
CONSTRUCTION CONSULTANTS
411 So. 5th Ave. Lake Worth, Florida

At Your Service . . .

These Classified Sections are at your service to bring business needs or "opportunities" to the attention of men in executive, management, sales and responsible technical, engineering and operating capacities with the industry served by this publication.

STRUCTURAL ENGINEERING
ARCHITECTURAL ENGINEERING
OUR COURSES of instruction by mail HAVE HELPED THOUSANDS to better positions and to pass State Board Examinations. Forty-third year.
WILSON *Engineering Corp.*
College House Offices HARVARD SQ. CAMBRIDGE MASS.

Your CATERPILLAR DEALER

For Lower N. Y. STATE & CONN.

Offers BONDED USED EQUIPMENT

INTERNATIONAL TD24 DIESEL TRACTOR, crankcase guard, canopy top, w/Bucyrus Erie DD cable control and bulldozer blade. Repairs included rebuilding engine and flywheel clutch, rebushing track rollers, blade repaired. Good value at **$8,500.00**

ALLIS-CHALMERS MODEL HD5 DIESEL TRACTOR, 16" tracks, 2 front lights, crankcase guard, radiator guard, elect. starter w/Garwood Hyd. Bulldozer. Good condition. Price **$3,000.00**

INTERNATIONAL MOD. TD14A DIESEL TRACTOR, 18" tracks, crankcase guard, track roller guards, with Issacson bulldozer. Ready to go to the work. Price **$4,000.00**

SHOVELS

LORAIN MOD. L820, 2 yd. Shovel, originally shipped 1950, with Waukesha Mod. WAK-6 diesel engine. Completely rebuilt. This shovel as good as new. Rebuilt and guaranteed. No expense has been spared to make this shovel as good as new. **$35,000.00**

LIMA MOD. 604, 1½ yd. Shovel, with 1¾ yd. dipper. Cummins diesel engine. Every part of this machine, including engine thoroughly checked. Any parts showing appreciable wear have been replaced or were rebuilt. Must be seen to be appreciated. Rebuilt and Guaranteed **$26,000.00**

LOADER

MINNEAPOLIS MOLINE MOD. "R" Gasoline Wheel-Type Tractor w/ Lull ⅝ cu. yd. hydr. bucket. Excellent condition. "Certified Buy" **$3,300.00**

Subject to Prior Sale

H. A. Penn Machinery Co.

140TH ST., & EAST RIVER
NEW YORK 54, N. Y.
CYpress 2-4800

CLIP & MAIL TODAY

☐ I am interested in:_____

☐ Send me all used Listings.

Name .....

Address .....

City .....State .....ENR.

SEARCHLIGHT SECTION

(Classified Advertising)

BUSINESS OPPORTUNITIES — EQUIPMENT - USED or RESALE

UNDISPLAYED ——RATES—— ***DISPLAYED***

$1.80 a line, minimum 3 lines. To figure advance payment count 5 average words as a line.
PROPOSALS, $1.80 a line an insertion.
BOX NUMBERS count as one line additional in undisplayed ads.
DISCOUNT of 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

The advertising rate is $20.50 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.
AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches—to a page.
EQUIPMENT WANTED or FOR SALE ADVERTISEMENTS acceptable only in Displayed Style.

Send NEW ADVERTISEMENTS to N. Y. Office, 330 W. 42nd St., N. Y. 36, N. Y. for July 28th issue closing July 18th

WANTED

(4) SHIPYARD WHIRLEY CRANES

Model 28H 120K WASHINGTON
Model R20 or R25 AMERICANS
Model 200 or 240 COLBYS

Not interested in Units with National Security Clause attached

W-7018, Engineering News-Record 330 W. 42st., New York 36, N. Y.

FOR SALE

1—Browning T-20 Truck Crane. 30 ft. Boom. Waukesha 6 Hercules powered. 1954. Little used .....$19,500.

1—Lorain T.L. 20 Truck Crane. 30 ft. Boom. Waukesha's up and down. Newly conditioned .....$10,000.

2—Koehring 605-1B Crawlers.—Long Cats 30" Pads. 1½ yd., 30 ton capacity. Collapsible Gantrys. Unbelievably clean. $26,500. each

Lester Kehoe Machinery Corp.
1 East 42nd Street,
New York 17, New York
Tel—MUrray Hill 2-5481

FOR SALE

1—New Bay City, model 45, hoe: S/N 7744; 28" shoes, 20' boom, 42" bucket. Powered by GM 3-71 diesel engine. A real buy. Attractive savings.
1—Schield Bantam backhoe, model T35. One extra bucket. Mounted on GM truck 6x6. Both engines checked. Painted. S/N 4149. $4,000.
1—Unit, model 514, backhoe: S/N 47096; ½ yard bucket, 18" shoes, long crawlers, gas engine. Cleaned and painted. $4,000.
1—Insley K-12 backhoe attachment with 36" bucket. Complete. $700.
1—Insley K-12 backhoe. Complete with 36" bucket, 18" shoes, long crawlers, gas engine. $4,000.
1—Lima 604 crane: S/N 3289-74; 50' boom, 16' crawlers, 34" treads. Cat. D-13000 diesel engine.
1—Lima 1201, 2½ yard. High-Lift shovel, 42' boom, 40 handle, Cummins L diesel engine.
1—Lima 1201 dragline, 80' boom, 18'11" crawlers, 44" treads, Cummins L diesel engine.

CLEVELAND CONTRACTORS EQUIP. CO.
10904 Brookpark Road Cleveland 30, Ohio
SHadyside 1-5570

DRAGLINE-CRANE BARGAINS

1201 Lima diesel 85' boom, 3 yard bucket. Independent boom hoist. $17,000.00.

K-480 Link Belt diesel 70' boom, 2 yard bucket. Completely rebuilt. Independent boom hoist. $16,500.00.

604 Lima 60' boom 1½ yard bucket. Independent boom hoist. $20,000.00.

Frank Swabb Equipment Co., Inc.
313 Hazleton Nat'l. Bank Bldg.
Hazleton, Pa. GLadstone 5-3638

FOR SALE
THEW SHOVEL MOTO-CRANE

Model MC254 Equipped with 30' Crane Boom, Lifting Equipment, 4 floats and screws, 20' Center section, 10' center section, Clamshell equipment, and 15' jib and pendant. Nearly new.
Call CL. 2-0023 for information.
David W. Murray Co., Cleveland, Ohio

PENGO AUGERS

1 New 6' Auger and 1 slightly used 5' Auger. Both equipped with one set of teeth.
Any reasonable offer will be considered.
A. S. WIKSTROM, INC.
P. O. Box 385 "Massena Special",
Massena, N. Y.

FOR SALE

1—Bay City Model 65 (1 Yard) Crawler Shovel Crane Serial No. 5037. Cummings—H-6 Diesel power. Equipped with two shovel fronts and 70-foot boom. Excellent condition. Price $19,000.00

1—P & H. Model 855 Crawler Shovel Crane. Serial No. 10984. Powered by GM 671 Diesel. Equipped with shovel front and 90-foot boom. Excellent condition. Price $31,000.00

1—Lorain Model 820 Crawler Crane. Serial No. 18221. Powered by Caterpillar D 13000 Engine and 90-foot boom. Excellent condition. Price $29,000.00

The above equipment is available and ready to work immediately.

E. & E. J. PFOTZER, Inc.
P. O. Box 126 Wilmington, Delaware

ELECTRICAL WIRE AND CABLE

—YOUR BEST SOURCE—

• for every industrial and power application
• Odd lengths—long and short—reasonably priced

One of the Largest Stocks in the Midwest

Let us quote on requirements—
send your inquiries
We'll also buy your Surplus
Branch Offices:

Houston— Walnut 3-4580
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FOR YOUR TEMPORARY NEEDS TRY OUR SURPLUS DIVISION

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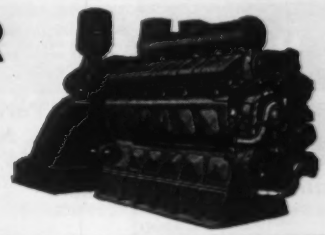

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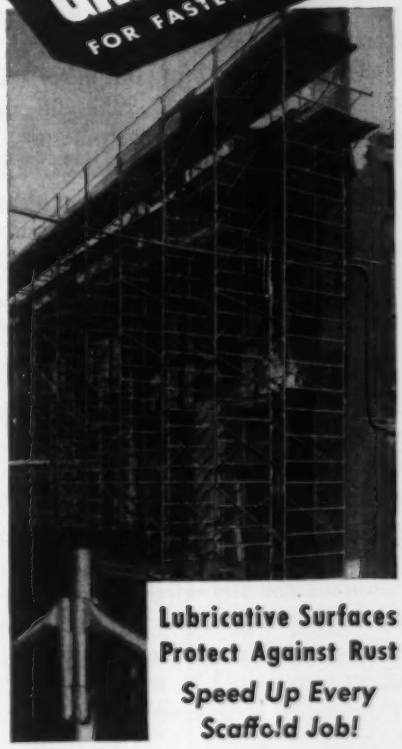

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EDITORIALS

Optional Methods for Soil Testing

A RADICAL IDEA for setting up soil testing procedures was expounded by Prof. Donald P. Burmister, of Columbia University, during the annual meeting of the American Society for Testing Materials. He proposed that several modifications of ASTM soil test procedures be included in the standards as options. This proposal would require judgment to be exercised in the selection of an "appropriate" modification.

Unquestionably, Prof. Burmister was encouraged to back this radical idea by the difficulty of obtaining agreement on standard test methods in the ASTM committees. Also, he believes that the proposed procedure would have the advantage of application under a wider range of climatic and environmental factors and thus would more adequately reflect actual field conditions than a rigid standard.

However, the flexible specification has several serious disadvantages. The chief one lies in an increased opportunity for disagreement over test results, since different laboratories may choose different optional methods. Inasmuch as there also may be a difference of opinion in interpretation of test results, the new-type standard is likely to cause, rather than dispel, confusion. It may make necessary the employment of a soils "expert" to select the "appropriate" modification of the test method, even for small projects. And testing laboratories might be unable to set up routine procedures, with the result that the cost of making tests would be increased.

Consequently, though Prof. Burmister's proposal is intriguing, it appears wise to continue to develop a single standard for each test method, despite all the difficulties of reaching agreement in committees.

Brighter Highway Prospects

PROSPECTS for highway legislation on the scale proposed by President Eisenhower in his "Grand Plan" brightened considerably on July 1 when Representative George H. Fallon introduced a new highway bill (H.R. 7072) in the House. Although this Fallon bill differs radically from the recommendations of the Clay Committee on the matter of financing, it is in close harmony with that committee on the amount of federal money to be provided for the Interstate System, and goes beyond the recommendations of the Clay group as to the amount of regular federal aid to be granted to the states in the years immediately ahead. But what is more significant from the viewpoint of supporters of the President's program, the Fallon bill comes much closer to meeting the President's main objective than does the Gore bill, already passed by the Senate, and its sponsor is chairman of the influential House Subcommittee on Roads.

Concerning the Interstate System, the Clay Committee recommended that $27 billion be spent on that system over a ten-year period, of which $25 billion would be federal money. The Fallon bill calls for the expenditure of $26.4 billion over twelve years, of which $24 billion would be federal aid.

On the matter of continuing regular federal aid, the Clay Committee recommended that the $875 million authorized under the 1954 Highway Act be cut back to $700 million by eliminating the $175 million assigned by that act to the Interstate System. The Fallon bill, on the other hand, starts with $725 million in the first year and increases the grant annually by $25 million over 12 years. As a result, the total expenditures (federal money plus state matching funds) authorized under the Fallon bill would amount to $47 billion over 12 years, whereas the Clay Committee proposed to spend $41 billion in ten years.

When it comes to financing, most of the similarity in the two proposals disappears. The Clay Committee proposed to finance all work on the Interstate System with special bonds to be backed by part of the federal income from motor-fuel taxes. The Fallon bill proposes to finance its entire program through higher Federal motor-fuel taxes and by sharp increases in excise taxes on tires and tubes for large trucks. These proposed increases are likely to produce more opposition than was aroused by the Clay Committee proposal to issue bonds outside the federal debt limit.

Because of strong opposition to the financing provisions of the Fallon bill and bills sponsored by the Eisenhower Administration, many observers in Washington doubt that any highway bill will be passed at this session. But if the Fallon bill can be taken as an indicator of the trend of thinking in Congress, the trend appears to be in favor of a program at least equal in magnitude to that outlined to Congress by President Eisenhower in his Highway Message to Congress last January. Thus, even though no bill is passed at this session, the groundwork will have been laid for legislation at the next session that will meet the President's specifications.

Building Goodwill

FLAGMEN on highway jobs in Idaho now hand to each passing motorist a folded single-sheet leaflet telling them that there is construction work ahead and what is being done, and asking them to drive slowly, follow the car ahead and not to pass other vehicles.

Other states use big signs to give travelers the same type of information, and there may be still others that use a similar handout. More could follow similar practices to their advantage. For such clear evidence of interest in the people who are inconvenienced by the work is a fine builder of goodwill.

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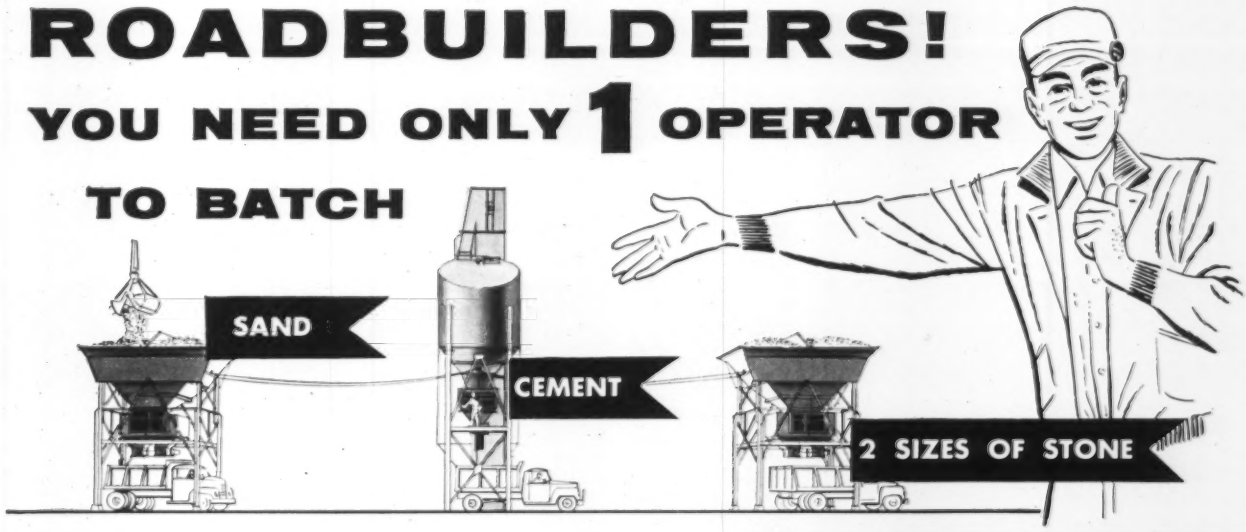

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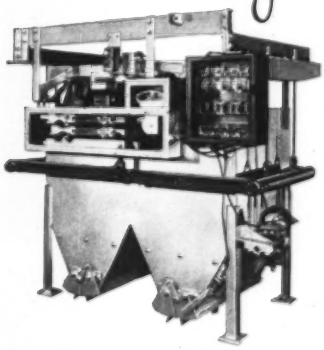
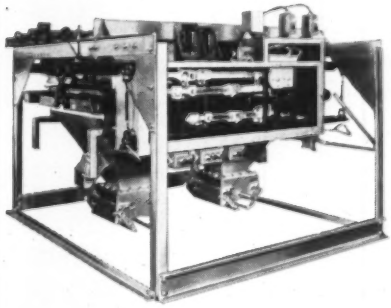


SAND

Two batches are discharged simultaneously. Electrical controls permit operation either by man at cement batcher, by the truck driver or, if required, by operator stationed on the sand batching plant.



CEMENT

Here one man may operate all 3 units or the cement batcher alone. Hoppers are quickly and accurately charged by ingenious combination of rotary gate (for speed) and vane feeder (for final accuracy).

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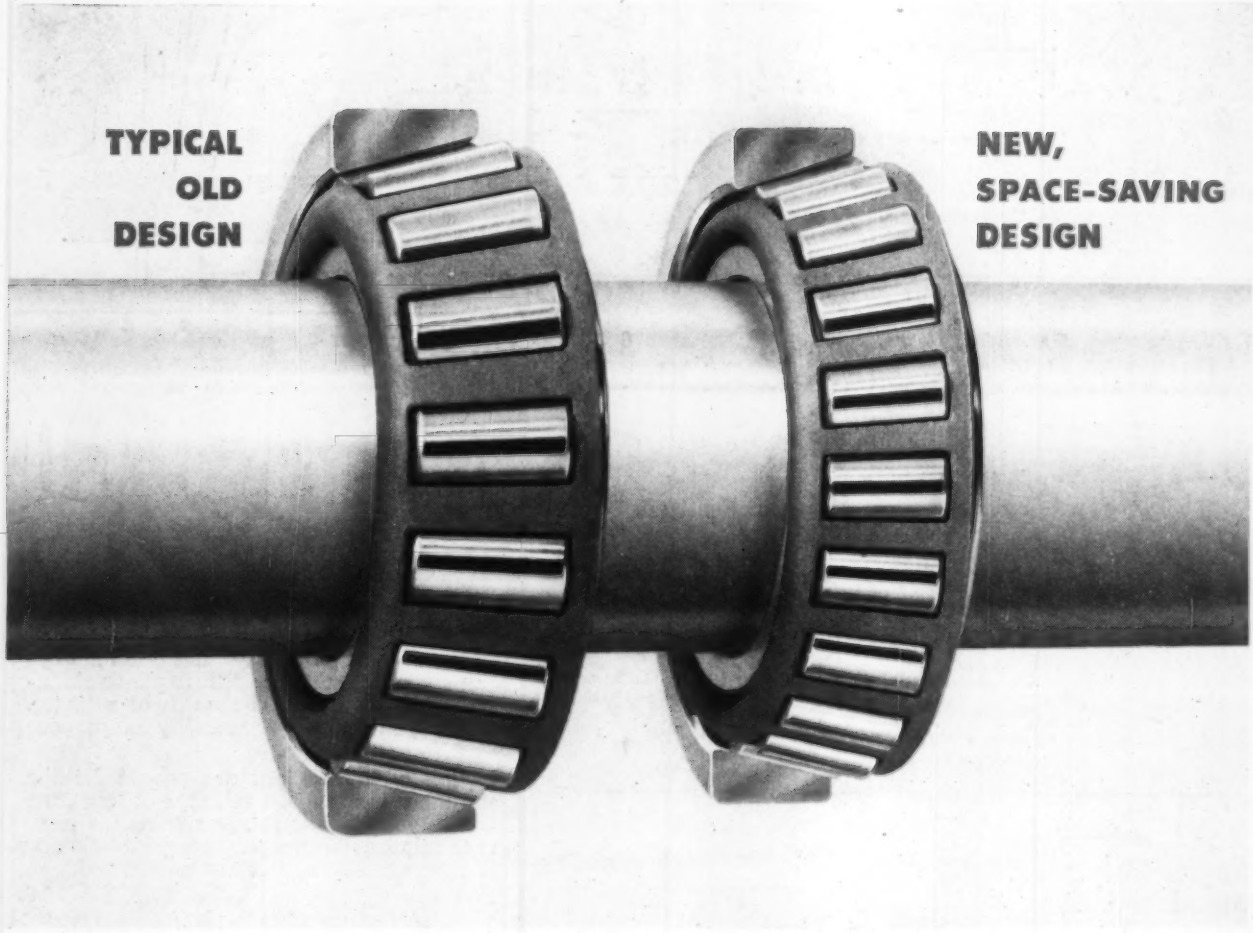

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